H. Hladun, L. Herman, V. Shastalo,
S. Sydorenko, Yu. Hladun, A. Suska, O. Saychuk

Gardens, parks and landscape design:

terms and definitions

Kharkiv–2018

UDK 712.4+635.92(075.8)

It is affirmed for printing by the Academic Council of P. Vasylenko Kharkiv National Technical University of Agriculture (record of evidence N4, May the 22th, 2018)

Reviewers:
Professor of the Department of English Philology of Zaporizhzhya National University, Doctor of Philology sciencies, professor H.I. Prykhodko;

Professor of the Department of Reforestation and Forest Reclamation of NULES, Doctor of Agricultural Sciences, professor V.Yu. Yukhnovskyi

ISBN 978-617-7634-17-0

Gardens, parks and landscape design: terms and definitions / H. Hladun, L. Herman, V. Shastalo, S. Sydorenko, Yu. Hladun, A. Suska, O. Saychuk. Kharkiv: PromArt, 2018. 156 p.

Glossary of terms and definitions contains the main conceptual and terminological apparatus concerning the course of training Masters in speciality 206 “Landscape management “and depicts the history of development and modern tendencies in garden and park construction and landscape design. The glossary can be helpful for students and post-graduates of other forestry and biological specialities, researchers and practical workers.

ISBN 978-617-7634-17-0

© Hladun H.
© Herman L.
© Shastalo V.
© Sydorenko S.
© Hladun Yu.
© Suska A.
© Saychuk O.

PREFACE

The program of training students in the specialty 206 "Landscape management" foresees studying the following theoretical issues: the design, construction and exploitation of garden facilities; the cultural practices of creating and maintaining green plantations and their caring; the types of tree and shrub plants, which serve as the basis for creating their compositions in different types of gardening and parking objects. Therefore, the purpose of this terminological work and its task is to represent the reference terminology units, which outline the conceptual apparatus of the investigated branches.

Ukrainians are eager to decorate their estates with cherry and apple orchards, flowering mallows and ornamental plants. Today, garden and park art is of considerable interest in Ukraine due to the influence of the practical experience and aesthetic design of the objects of Western Europe and other countries on the principles of garden and park construction. It increases the demand of specialists in gardening and phytodesign at labour market, as well as raises the relevance of training specialists in this field.

The proposed glossary will help those who wish to master deeply both theoretical issues and practical tips accumulated by the history and rich experience of garden construction.

Photo on cover is taken from: http://www.udau.edu.ua/assets/images/ fakylteti/spg/specs/gardening/3.jpg

English Alphabet

A B C D E F G

H 1 J K L M N

0 P Q R S T U

V W X Y Z

A

Aberration – abnormalities in the structure and function of the molecules, specific structures of cells, tissues, the extreme morphological variant which occurs around the whole area of this form and in most cases represents non–hereditary modification, structural changes in chromosomes, chromatids.

Abiotic factors – a set of physical conditions of the natural environment (air, sunlight, heat, wind, relief, maternal breed, soil etc.) that affect the vital functions of organisms and their systems.

Abiotic factors – the set of conditions in the inorganic environment that affect living organisms. They are divided into chemical (the composition of the atmosphere, sea and fresh water, soil etc.), climatic (atmospheric pressure, the movement of air masses, sea currents, radiation etc.), orographic, edaphic etc. Agroforestry measures significantly affect certain abiotic factors, changing them into more favourable for the growth of both the plantations and biological objects on lands located within their protective effects.

Acid soil – a soil with a pH lower than 7.0 is an acid soil. (a soil pH higher than 7.0 is alkaline). Basically, pH is a measure of the amount of lime (calcium) contained in your soil.

Acaricides –chemicals used to control mites. Acaricides are divided into ovicides, which destroy the eggs of mites, larvacides that destroy the larvae, and imagocides, which are used against adult stages of mites. To control spider mites the effective are contact specific acaricides – tedion, keltan, chlorbenzid and chlorobenzilate.

Accent – the compositional technique based on the strongest contrast and underlining any detail, groups of trees, one tree or shrub in common landscape painting; it attracts attention by its silhouette crown shape, leaf colour, and brightness. It is achieved, for example, by the location on the open space especially of the individual ornamental trees (solitaires).

Acceptable level – the derived norm for radionuclides entering the human body during a calendar year, averaged over the year of the equivalent dose rate, the concentration of radionuclides in the air, drinking water and ration, particle flux density, etc., calculated for reference conditions from the dose limits values.

Acclimation – a set of useful homeostatic changes in the morphology or physiology of the organism, which gives it the opportunity to survive and exist in unfavourable conditions.

Acclimatization – the process of adapting plants to new and unfamiliar conditions of existence. It takes place in cases when plants are transferred by a person or occur alone in areas where they did not exist, or where they existed, but for various reasons they have completely disappeared (in this case we are talking about the reacclimatization). It is a lengthy process associated with the introduction and naturalization.

Achromatic colours – white, black and all shades of gray. They are characterized only by light, or the sensation of brightness, which is determined in percentage of the luminance standard of the white colour.

Active soil microflora – a set of microorganisms that constantly function in the soil.

Acultural landscape – the result of unsustainable activities or adverse effects on neighbouring landscapes, that lost the ability of healthy environment function. Acultural landscapes in this case are degraded landscapes, which have lost the ability to perform any of the functions.

Adaptation – the set of devices, the reactions of the living system (organism, population, species, biocoenoses) aimed at maintaining functional stability under changing environmental conditions, as well as joint cohabitation in ecosystems of a certain type. Adaptation contributes to the possible existence of individuals during ontogenesis and preservation of the species.

Adaptive crop growing – is a new perspective stage of crop development based on the use of adaptive potential of all biological components of agroecosystems to ensure a high level of utilization of solar and other renewable and inexhaustible resources of the natural environment in the interests of a man.

Adventitious plants – emigrant plants for a given area or type of biocoenosis, phytocoenosis. In Ukraine, there are more than 100 species of adventitious species, including quarantine weeds such as ambrosia, etc.

Adventive organs – are parts of plants that do not originate from the meristematic tissues of the growth point, but are formed in unusual places (roots on stems or leaves, buds on internodes or roots).

Aeration of soil – soil gas exchange with atmospheric air. Good soil aeration is needed for a successful plant growth and development and is one of the indicators of soil fertility. Biological processes in soil are connected with spending of soil air oxygen. When aeration takes place the soil air is enriched by oxygen necessary for respiration of plant roots and microorganisms, and the soil layer of air – by the carbon dioxide used in the process of photosynthesis. Soil aeration is predetermined by temperature fluctuations in soil and atmosphere, gas diffusion, changes in atmospheric pressure, wind action, periodic soil moisturing and drainage, etc.

Aerial roots – are the adventitious roots that are characteristic of many epiphytic plants occurring in plants on aboveground shoots high above the ground and designed to absorb moisture from the air (e. g, monsters) .

Aerodynamics – a science that studies the patterns of movement of air streams in various, mainly technical circumstances. There are aerodynamics of forest belts of various designs and systems on areas of land use, groups of trees and green landscaping arrangements.

Aerosolarium – a playground in the garden or park within medical and recreational establishments that are specifically equipped for the receiving air and solar baths. When establishing the aerosolarium the surrounding landscape, the architecture of the buildings in the vicinity are taken into account, small architectural forms – fountains, flower beds, shady umbrellas, cabins for changing clothes are used. Summer aerosolarium is placed on flat, open to South or South–East sites of the parks, woods, on the shore of a sea or river, etc., away from highways and industrial enterprises. Winter aerosolarium is placed on the flat roof of the building, glassed porch where the necessary microclimate conditions (indoor aerosolarium) are created.

Aesthetic appreciation of the park, the forest park phytocoenosis – the evaluation of the picturesqueness of plant communities, including taxation–phytocoenotic characteristics and emotional perception of the person. According to these two groups of parameters three classes of aesthetic evaluation are defined: I – high, II – medium, III – low.

Aesthetic estimation of phytocoenoses – it takes into account the pictoriality of the plant group, uses taxonomic and phytocoenotic features and emotional perception of a person. It is defined in points according to the appropriate scales.

Aesthetic evaluation of the landscape reflects the beauty and harmony in the combination of all components of the forest vegetation. There are three classes of aesthetic assessment of landscapes: elevated, poorly-drained, lowered logged lands.

Aesthetics – the science that studies the general regularities and principles of artistic creativity, essence, the origin and development of art, including landscape gardening.

Agglomeration of communities – combining simple plant communities formed of several environmentally homogeneous species, mostly annuals and perennials, less of one perennial.

Aggregate composition of the soil – the set of different soil aggregates by form and size included in its composition. According to the classification of N. .I. Savinov one can distinguish the clods of more than 10 mm in diameter, lumps – 0.25-10 mm and dust – less than 0.25 mm. As to the composition the soil aggregates are simple (composed of elementary particles) and complex (consisting of microaggregates). Soil structure, and thus air and nutrient regime, fertility and antierosion ability depend on aggregate soil composition.

Aggregate soil composition – the fraction content of aggregates of various sizes (expressed as a percentage of the mass of dry soil).

Aggregation – single–species phytocoenosis is the set of individuals of a certain plants species. Aggregation can be ground and water. In plants the ability to aggregate depends on the mobility of germs (seeds, spores, etc.). The lower their mobility, the closer they germinate to the parent individuals. The greatest is found in plants that reproduce vegetatively. Aggregation plays a leading role in shaping the spatial structure of populations.

Aglomeration of settlements – the settlements congestion (especially in cities) that make up the socio-economic and environmental community. They are characterized by the predominance of industrial landscapes, intensive urbanization of the territory, the increased degree of human impact on the environment and its transformation, including its intense pollution.

Agraph – elegant floral motif that was used in the design of the garden parterre in the baroque gardens of the XVII-XVIII-th centuries. It looked like a picture from a bunch of branches, leaves or flower petals that came out from one point at the edge of the parterre.

Agreement – the main organizational and legal document that regulates the relationship between the customer and the designer; they can be unilateral ,bilateral or multilateral.

Agricultural forest landscape – agrolandscape, is a process of energy flows, matter and information for their improvement, altered mainly by forest melioration methods. The most significant changes occur in agroforest landscapes, which used a full range of agroforestry plantations, created by landscape or watershed principles. It is a progressive and productive kind of man–made landscapes.

Agricultural reclamation – is restoration of the natural fertility potential of soils on the affected lands for the effective and environmentally safe use in the cultivation of crops or livestock breeding.

Agricultural steppe – a semi-natural grouping created by seeding hay–seed mixtures harvested in natural steppe communities. At the beginning of the century this method was firstly used to restore prairie vegetation in the state of Wisconsin by American ecologist John Curtis that seeded the mixture of grass seeds collected in natural communities. This method was simplified by Stavropol' botanist D. Dzybov who began to sow hay-seed mixture **;**scattered hay, received in two terms in such a way that it gets seeds of most species of grasses. Its creation is an effective way of reclamation of eroded croplands, turf, that is formed, protects the soil from destruction. The yield is higher here than in the nature steppe, and, in addition, the nutritional value of hay or pasture forage is bigger.

Agrobiocoenosis – artificially created groups of living organisms in order to get food, technical or other production necessary for satisfying vital needs of society.

Agrobiodiversity – 1)the diversity of living organisms (plants, animals and microorganisms) grown in rural areas; promote agricultural production or use areas of agriculture to provide food and shelter; 2) the diversity of native species of animals, plants, fungi, microorganisms and viruses spread on agricultural lands; 3) the cultural diversity of species, .i.e. species and varieties of cultivated plant species and breeds of domestic animals and their ancestors, species and strains of fungi and microorganisms.

Agrochemical monitoring – a system of supervision and control over natural and man–made natural systems, as well as processes taking place in them, in order to ensure rational use of natural resources and environmental protection.

Agrochemical monitoring of soils – potential and actual level of soil fertility by physic-chemical, biological, biochemical and other indicators, the balance of humus, main nutrients and energy, balance intensity.

Agroclimatic zoning – is a scientifically grounded division of territory based on similarities and differences between agro-climatic resources and by the degree to which agricultural needs are met by resources. It is one of the types of sectoral climatic zoning. It is used in the eleboration of forest-meadow measures, especially in the selection of breeds for protective forests and the allocation of limiting zonal factors.

Agrocoenoses – cultural plant communities that belong to the group of crops, cultivation of which is confined to specific land funds. Placement, order in the rotation, cultural practices etc. that are placed in the process of farming. In general, these are the sowings and plantings of grain and vegetable crops which are cultivated by collective farms on large areas.

Agroecology – the science that studies a part of the biosphere composed of crops, livestock and soil suitable for growing crops.

Agro-ecosystem – ecological system that combines land area (geographic landscape) involved in farming, which produces agricultural products. It includes: soils with animals, algae, fungi, bacteria that inhabit them, field-agrocoenoses, livestock, fragments of natural and semi–natural ecosystems (forests, natural grasslands, marshes, ponds), a man. Key features are defined by a person who is at the top of the ecological pyramid and is interested in getting the maximum number of agricultural products. Thus, if a man follows the environmental imperative, he conserves the soil, biological diversity, does not allow agricultural pollution and receives environmentally pure products, and the agroecosystem receives the traits of resistance(sustaining). Agro-ecosystem – autotrophic ecosystem, the main source of energy for which is the sun. Solar energy is absorbed by plants producers and fixed in the yields of crop production or transferred by the chains of nutrition by consumers the chief among them are the cattle, and decomposers.

Agrolandscape – a kind of anthropogenic landscape view, natural vegetation of which on the major part of its area is replaced by agrobiocoenoses. The historical aspect is one of the oldest man–made landscapes. Significant changes are obtained by soils, flora and fauna, microclimate, biocirculation, their ability to regeneration, self-cleaning and self-regulation that is characteristic of the natural landscapes. Most research schools mean by this term those lands of landscapes that are regularly cultivated, i.e. arable lands. It is also a rural landscape, which is used in the landscape planning of settlements. By its terminological meaning, it is subordinated to a more extended concept of agricultural landscape that includes other types of land and urban areas.

Agrosphere – a part of the biosphere, which is in agricultural use (i.e. it is under agroecosystems). Its share accounts for about 30% of the land, including about 10% of arable land, and the rest is natural fodder lands. This ratio varies in different parts of the world. Its resources are depleted because the land use is conducted without compliance with environmental requirements. Over the past 50 years, the loss of productive arable lands in the world reached 6 million hectares per year, the degradation of pastures occurs due to the rapid increase in livestock. Great damage is brought by unbalanced hydromelioration. Under the influence of soil erosion, soil salinization and overgrazing the process of desertification and land degradation takes place.

Agrotechnical area preparation – preparing the soil for planting or sowing in nurseries or gardening objects; preparatory stage before planting trees, shrubs, herbaceous plants, which includes the collection and removal of construction and household waste, topsoil replacement (if necessary) etc.

Agrotechnical caring for plants – measures for loosening soil and destroying weeds during the first years after planting forest plantations until the time of closing crowns to improve their growth.

Agroterrace – earthy stepped land formation, created as a result of many years cultivation of lands across the slope.

Ahemerobe biogeocoenoses – are natural systems that are not connected with economic activity – primitive forests, meadows, swamps, steppes. In the conditions of urban areas they almost do not occur.

Air humidity –the content of water vapour in the air. It is characterized by such parameters: elasticity, absolute and relative humidity. Vapour pressure *e* or its partial pressure is the portion of atmospheric pressure that creates an available in the air water vapour. At any temperature the vapour pressure cannot exceed a certain threshold (value E), which is called the elasticity of saturation. The elasticity of the saturation increases with increasing air temperature. The absolute humidity **a** is the mass of water vapour in grams contained in 1 m^3 of air. Between the absolute humidity and partial pressure there is a relationship: $a = 0,8 \bullet e / (1 a t)$ where $a = 1/273,15$ – thermal coefficient of volume expansion of ideal gas; t – air temperature, °C. By relative humidity we understand the ratio of available vapour pressure to the saturation of elasticity in %: $b = (e/E) \bullet 100\%$.

Air perspective – change in the brightness and sharpness of objects, as well as their colours as far away from the observation point. It is often observed in the mountains in the form of blurred outlines of mountain landscapes.

Air soil regime – is a combination of all the phenomena of air flow into the soil, its movement, costs, exchange of gases between soil and atmospheric air, solid and liquid phases etc.

Albedo – the value characterizing the reflective ability of any surface; it is expressed as the ratio of solar radiation reflected by the surface to the solar radiation received by the surface. E.g. Albedo of black soil – 0,15; of sandy soil– 0,3-0,4; medium Albedo of Earth – 0,39; of Moon – 0.07.

Alkaline soil – a soil with pH higher than 7.0 is an alkaline soil. (a soil pH lower than 7.0 is acidic) Basically, pH is a measure of the amount of lime (calcium) contained in your soil.

Allelopathy – mutual (often harmful) influence of plants used in the composition of phytocoenoses due to the release of biologically active substances into the environment. The term was introduced by H. Moll (1937). There are breed–activators (lat. Activus – active), which have a positive effect on other species in the plantation and breed–inhibitors (lat. Inhibeo – keep) that adversely affect the breed in their joint development. For example, the oak is positively affected by honey locust, honeysuckle Tatar, and field maple, small–leaved lime etc., and negatively – Robinia pseudoacacia, Betula pendula and others. A pine is affected by Siberian larch, yellow acacia, Betula pendula, oak etc.

Alluvial soil – soil formed in the floodplain during periodic flood by flood waters and the deposition on the surface of the river sediments (alluvium); it is characterized by a slight differentiated profile.

Alluvium – the deposition of a variety of clastic material (pebbles, gravel, sand, loam, clay), which are formed in the form of layers of different thickness by flowing and standing flood waters. As a result of it floodplains, terraces, and river deltas are formed. There are river-bed alluvium, formed of large fragments (boulders, pebbles), and floodplain alluvium – from finer material. High fertile floodplain soils are formed from it.

Alohors – plants seeds, fruits or spores of which are spread by wind (anemochors), water (hydrohors), animals (zoochors) or person (anthropochors).

Alpine type of garden-park landscape is characterized by a combination of plant material and stone. In natural conditions this combination is often found mostly in the mountains, from where the name of the landscape originates. These rock gardens are created from plants of Alpine and subalpine zones of the mountains. For high-mountains plants low growth is peculiar. To expand the range of rock gardens the people began to grow not only Alpine, but groundcover plants, mainly xerophytes. Such gardens are sometimes called rock gardens or rocaria.

Altimeter – a device for measuring the height of the growing tree when inventory and landscape taxation of the plantations are conducted. Structurally they are divided into mechanical, optical and optical-mechanical. Modern altimeters are mainly internally basic, equipped with rangefinders**.**

Amensalism – the suppression of one organism by another without noticeable reverse negative influence of a depressed organizm (for example, the influence of the parent tree, which inhibits the seedlings of the same species or other species of plants, by intercepting light, moisture, nutrients etc.).

Ampel plants – plants with drooping or curly shoots that are planted in hanging containers (vases, pots) or mounted on special tiers. The most common are petunia, nasturtium, verbena, pelargonium, fuchsia, tradescantia etc. They are used for green landscaping of balconies and terraces, residential and business rooms, in the streets.

Amphitheatre – a special architectural structure of ancient Greek times in the form of an ellipse that was built often on a mountain slope or hill and was used for mass entertainment. In the Roman Empire it was already a covered circular or ellipsoidal construction for mass spectacles, with seats for sitting that were arranged in tiers or steps.

Amphora – a type of pottery with a narrow neck and two handles designed for the decoration of gardens and parks. It was used to store wine, oil, grain by ancient Greeks and Romans.

Ampire style – a late classical style in Western European architecture that emerged in France during the reign of Napoleon. The Ampire is characterized by strict monumental forms and fine art forms in the style of ancient Egyptian and ancient Greek decorative forms, for example, military trophies, winged sphinxes etc.

Amusement park – is an area where there is a large number of attractions and spectacle buildings, and not less than 40% of this territory is occupied by plantations, places for recreation of visitors.

Anaerobic bacteria – microorganisms that do not need oxygen for life. They live in the soil at great depth or in a very wet soil. An example of such bacteria is microorganisms that make up humus from residues of plants and animals.

Analysis of grouping – it can be: quantitative (determination of the number or biomass of organisms per unit of area within this group) and qualitative (determination of the systematical classification of organisms).

Anchority – is a degree of plant fixation in the soil with the help of roots. With a weak anchority (mainly in plants with a superficial root system) plants swing from strong winds and are damaged. It can be prevented by tieing up plants to strong supports.

Annual shoot – develops from a bud during the growing season. For example, in oak, maple and other plants, the growth of shoots lasts for two – three weeks and ends with the formation of the apical bud. In species of the genus willow, they grow throughout the growing season.

Annuals – a group of plants in which the life cycle (from germination to fruiting and dying) lasts one vegetation period. Due to the diversity of flower forms and inflorescences, the coloration, the terms of flowering they occupy one of the leading places in the flower garden. They include not only annual floral plants, but also perennials, which freeze in winter, that are planted for one season from seedlings. By their use, annuals are divided into six groups: beautifully floral ones – they are distinguished by a beautiful form of flowers and inflorescences, the duration of flowering and are used to decorate flowerbeds, mixborders, groups etc., and for cutting; wickers – are used for vertical planting of arbors, pergolas, walls, balconies etc.; dry flowers – differ from others by dry cotton fibers or leathery flowers, keep the natural colour for several years in a dried state and are used for cutting for winter bouquets, as well as in flower beds and rabatka; carpet ones – belong to a group of low-growing plants with beautifully coloured leaves, which are well exposed to trimming, which allows to use them for patterned flower beds, inscriptions, drawings, portraits; decorative-deciduous – are valued for beautiful and distinct leaves of different colours, they are used in groups and for decorating flower beds; pot ones – can bloom for a long time after the onset of frost: from the open land they are transplanted into pots and used for green landscaping of interiors.

Antagonism – a kind of relationship between organisms in which one of them retards growth, inhibits development or causes the death of another (one-sided), or happens mutual inhibition of partners (bilateral). In agricultural production it is one of the effective ways to control the quantity of harmful undesired representatives of microflora in forest landscapes thanks to the creation of favourable conditions for the existence of their antagonists.

Anthropogenic desert – a desert that arose as a result of direct or indirect negative human influence on nature.

Anthropogenic energy (in agro-ecosystem) – the energy received by a man, usually from exhaustible sources and is used to maintain the composition and structure of the agroecosystem. It comes into agroecosystem in the form of associated energy that has already been used for the production of agricultural machinery, fertilizers, pesticides, fuel, etc. Direct expenditures in agriculture comprise not more than 50% (including fuel – 35%) and the rest – indirect expenditures (30% – on production of agricultural machines**).** However, even its highest allocation in agroecosystem does not exceed 1% of its energy budget, the basis of which is an inexhaustible ecologically clean solar energy.

Anthropogenic factors – factors of influence on the organic world, associated with human activities. There are mechanical (deforestation, plowing, construction of roads, pipelines, channels), physical (heat, light, electrical and electro-wave field, sound vibrations), chemical (fertilization, liming, processing by chemicals, means of plants protection etc.) and landscape (artificial water courses, topography, water reservoirs, reclaimed and meliorated areas). In the case of application of land reclamation, they cause their ecological consequences. There are positive and negative ones.

Anthropogenic forms of relief – orographic configurations formed as a result of human activity. By origin, there are forms which are formed by the direct and indirect influence of man on the earth's surface.

Anthropogenic impact on nature – direct or indirect impact of man on nature, leading to its local, regional or global changes; constantly increases with the development of the productive forces and the intensification of natural resource use (see Anthropogenic load) and is the objective cause for the transformation of nature.

Anthropogenic landscape – a natural geographic complex, changed as a result of human economic activity. The agricultural landscapes are the most common in Ukraine, since about 42 million hectares of land are allocated for agricultural use.

Anthropogenic landscape changes – changes in topography, vegetation, fauna, hydrological regime, climate, microclimate, and, consequently, the creation of anthropogenic landscapes. Changes have direct or indirect character, progressive or regressive orientation as to their productivity and conducting socio–economic functions by landscape. Anthropogenic landscape changes can be reversible and irreversible.

Anthropogenic landscapes – landscapes formed under the influence of human activities. There are anthropogenic landscapes created by humans intentionally (proper anthropogenic) and those appearing as a result of unintended impacts on nature (the so-called Anthropos landscapes). By the predominant socio–economic functions we distinguish the landscapes of agricultural, forestry, industrial, urban, recreation, conservation, environment protective; by the degree of change: strongly altered, modified or poorly modified; by the nature of the consequences of the transformations : cultural, acultural and degraded (devastated).

Anthropogenic load – a measure of direct or indirect action of people on nature in general or on its separate ecological components, elements (landscapes, natural resources, etc.).

Anthropogenic loading – the amount of direct and indirect anthropogenic impact on the natural environment as a whole or on its individual components (e.g., recreational stress).

Anthropogenic relief – the forms of the earth's surface, altered or created by human activity.

Anthropogenic vegetation – vegetation, created by a man; phytocoenoses, which arose under the influence of human economic activity.

Aphilia – being without leaves. Aphilia are plants in which the role of photosynthetic **organs green stems: cacti.**

Apical dominance – the preferential development of the apical bud, which is characteristic for trees and shrubs that slows the growth of side shoots; this shoot grows mainly faster than the latter ones.

Aquacoenoses – plant communities in artificial water bodies: lakes, ponds, river coastal groups that have economic, recreational, and decorative purposes.

Aquarium – a pond or a special tank, which contains water animals and plants indoors or outdoors.

Aqueducts – water pipes irrigation and hydropower channels that are on special supporters and are transferred through deep ravines, valleys, rivers, railways, highways etc. The first aqueducts were built in Ancient Rome in the IV- th century and was a magnificent building made of several layers of stone arcades.

Arabesques – small plantations of carpet plants in open areas, which have the form of leaves, flowers, wreaths, etc. The plane of such flower garden is elevated above the general level. Arabesques are used mainly when the parterre lawns are arranged.

Arboretum –a collection of trees and shrubs, which are cultivated in the open soil and are used with scientific, educational and economic goal. One of the objectives of the arboretum is conducting work on introduction and acclimatization of plants new to this area.

Arboricide – a chemical used for killing unwanted trees and shrubs in forest, crops- on pastures, park and garden plantations etc.

Architectonics – (in decorative dendrology) – the artistic expression of the laws of construction peculiar to a certain breed or species of plants; it is the structure of the crown of the tree, size, shape, spreading branches and their locations.

Architectural drawing – a special type of graphic art, which depicts the design object or reconstruction; it has considerable visibility, reveals the artistic qualities of the object and its parts.

Architectural landscape is the landscape, formed in the process of purposeful architecture, including urban planning activity. It is considered as a kind of anthropogenic (cultural) landscape. Architectural landscape is represented by buildings, structures, natural features. It reveals regional natural features. The look of towns and villages is determined by their hilly or flat location, availability of rivers, lakes, seas, forests, climate, etc. The concept "architectural landscape", "landscape", "landscape of the living environment", "landscape of production environment" and others are included in the theory and practice of modern urban planning.

Architectural–planning organization of object areas – procedure for the placement of the main functional elements, structures, communications, roads, playgrounds; composite diagram showing the relationship between the artificial and the natural components of the ensemble (plantations, water bodies, buildings, monuments).

Architecture – the art of design and construction of various structures, the creation of artistically expressive ensembles, the formation of the aesthetic environment for human life.

Area – the area of geographical distribution of individual species or other taxonomic groups of plants and their communities (phytocoenoses). The higher is a systematic group, the greater is its range. There are Cosmopolis types, those that are widespread on all continents and endemic species that are distributed only on a certain limited area. The ranges are not constant: in young progressive types, they increase and in relict ones they decrease. Regularities of geographical distribution of plants is studied by biogeography, the basic concept of which is the species range. They can be entire and insular. Depending on time, conditions and factors of area formation there are primary, secondary, natural, artificial; depending on the change trend they can be: modern, relict, expanded and reduced, restored; depending on the nature of area forms they are solid, broken, spotted, linear, endemic.

Area wind regime – an established system of the direction and strength of the wind, which varies throughout the year.

Arid vegetation – is vegetation grown in conditions where plants suffer from a lack of moisture during most of the vegetative period.

Aridification of land – is a complex and varied set of processes reduction of the level of moisturizing the territories and is caused by it the reduction of biological productivity of ecosystems. It occurs both under natural (cyclic climate changes) and anthropogenic (pumping groundwater, erosion, black storms) reasons. The result is desertification and deepening the degree of dryness of the desert area.

Aridification of vegetation –the increase of xerophilous species in its composition with general decrease in the density of vegetation cover and biological productivity. It is a consequence of the increasing aridity of the climate under the influence of natural and anthropogenic factors.

Aridity – the aridity of climate, which hinders the existence of a large number of species due to the lack of moisture: the excess of evaporation (evapotranspiration) over rainfall.

Aridity index – the index characterizing the degree of climate dryness. According to Thornwait it is equal to 100 d/n where d is the moisture deficit (the sum of the monthly differences between precipitation and total evaporation for three months, when rainfall is less than annual evaporation); n – the sum of monthly values of evaporation for these months. According to de Morton, the result from dividing the annual amount of precipitation (R, cm) into the sum of mean annual temperature t, increased by 10, i.e. R/(t 10). According to Stentz, the result from the division of evaporation E into the amount of precipitation R.

Arrangement – the art of making bouquets, wreaths, floral baskets or vases while designing interiors and facades of the park's pavilions.

Artificial biogeocoenosis – cultural groupings managed by a man. Such structural-functional organization is characteristic for the ecosystem type of forest plantation, a garden or wheat field, a lawn or flower garden, a vineyard. Here more organic and mineral substances and water are applied. Along with it more organic matter in the form of whole plants or fruits is removed. Under the strong anthropogenic influence (e.g., a city park) lateral material and energy flows are, and the existence of heterotrophic units (herbivores, predators, parasites) depends entirely on human activities (the application of herbicides and pesticides, chemical fertilizers, air pollution from vehicles, mechanical elimination of individuals).

Artificial fertility – newly created fertility of soil by fertilizing and holding a complex of cultural practices, including crop rotation, melioration etc.

Artificial selection – a set of activities that are used to create new plant varieties and animal breeds and to improve those already existing. The term was introduced in 1859 by Charles Darwin who created the theory of such selection and showed that the basis of artificial selection is variation and heredity.

Aspect of phytocoenosis – the appearance of natural or cultural phytocoenosis during a certain period of its seasonal development, one of its morphology and physiognomy characteristics of the phytocoenosis. Aspect is a temporal phenomenon in the development of phytocoenoses and is caused by the external state of the plants in one or another phenology phase. During the growing season, from spring to autumn, one vegetable grouping changes the aspect several times. The aspect of the steppe plant associations changes 5-6 times. The aspect of association – the appearance of association, which varies depending on the seasonal phases of plant development. Inconstant aspect is such where some years of the overall cycle aspect of the development of phytocoenosis drop out in the connection with climatic features of the year. The homogeneous aspect is such that does not change on the whole territory of experimental plot. Spotted aspect is one where on a uniform background spots of plants of a different colours are scattered. Simple aspect consists of one species. Complex aspect is formed by several plant species. Temporary aspect is one that changes frequently during the growing season. Phenological aspects –those that change during the season. Characteristic aspects during flowering forsythia, fruit trees form. Birch and aspen trees – before the leaf fall.

Assimilation – the process of absorption and assimilation of substances from the environment and the formation of more complex organic substances. Assimilation takes place with absorption of energy. It provides growth, development, accumulation of materials and energy.

Associate ties – close biological and ecological relationship of different populations, due to which plant communities are formed and the communities with the trophic system of the grid are created.

Association – is naturally formed within a certain area with similar conditions for the existence of vegetation, homogeneous by species composition, the ratio of life forms, functional relationships, types of nutrient cycling, productivity and development trends. The Association is the basic unit of classification of vegetation cover, the set of homogeneous plant communities. Association similarly to species where interspecies differences are determined can have units of the lower rank, called subassociations or microassociations.

Association of microorganisms – association of populations of two or more types of microorganisms.

Association of soils – soil mapping unit that combines several soils in a single contour on a map.

Assortment– the species (breed) composition of various species and forms of trees, shrubs, herbaceous plants that are used for planting in the given area or in the design of a particular object.

Asymmetrical composition – one of the signs that characterizes the landscape (landscape) parks, which is manifested in the irregularities of the largest plots, in uneven shaped parts, so arranged as to maintain a balance.

Atavism – the appearance of features characteristic for their ancestors in individual plant organisms.

Atmosphere – the gaseous envelope of Earth, consisting of a mixture of different gases the height of which is about 100 km (the strict upper limit of atmosphere does not exist). Atmosphere includes: the troposphere – the lower 12-kilometer layer that affects the weather; stratosphere – reaches a height of 50 km (it includes the ozone layer with maximum concentration at a height of 20 to 30 km); mesosphere – located at a height of 50 to 85 km; ionosphere – a layer above 85 km (to 400 km). With a height the chemical composition and physical properties of the atmosphere change.

Atmospheric dust – is a collection of small solid particles (I-2-I0-4 cm) in the air capable of settling on Earth's surface in a windy–free weather. Dust sources can be of natural origin (weathering of rocks, volcanic eruptions), and man–made (emissions from industrial enterprises). The bulk of dust is concentrated at altitudes up to 500 m.

Atrium – an enclosed courtyard in the middle of a Roman dwelling where the rest of the room faces. In the center there was a pool above it there was the hole for a flow of rain water.

Attractants – substances secreted by animals (or their synthetic analogues) which act as chemical signals that attract individuals of their species. The range of attractants actions is from a few millimeters to several kilometers. The best studied are sex attractants that attract mating partners. Attractants also include odours that attract insects to the objects of nutrition and substrate for laying eggs. The most part of attractants act in very low concentrations. Thus, attractants of a female of silkworm can attract males at a concentration of $3 \bullet 10^{-19}$ g per 1 cm^3 of air. Some plants imitate sex attractants of animals. Thus, tropical orchids attract males of some insect pollinators, imitating sex attractants of females. Synthetic analogues of attractants are elements of biological methods of plant protection. For example, they are used in traps for pests (walls of traps are smeared with glue containing attractants scent).

Autecology – is a section of ecology that studies the influence of environmental factors on individual organisms, populations and species (plants, animals, fungi, bacteria). The task of Autecology is identification of the physiological, morphological and other adaptations of species to different environmental conditions: moisture regime, high and low temperatures, salinization of the soil (for plants). In recent years, Autecology has a new goal – studying the mechanisms of responses of organisms to different chemical and physical contamination (including radioactive contamination) of environment. The theoretical basis of Autecology is its laws. The first law is the law of the optimum: any environmental factor of any organism has certain limits of distribution (tolerance). As a rule, in the center of the range of factor values within the tolerance region is favourable conditions of organism life in which the greatest biomass and highest density of population are formed. On the contrary, the boundaries of tolerance are areas of oppression organisms, when the density of their populations and species are the most vulnerable to the effects of adverse environmental factors, including human impact. The second law is the individuality of ecology species: each species by each environmental factor is distributed differently, the curves of the distributions of various species overlap, but their optimum is different. For this reason, when changing environmental conditions in space or in time ecosystem composition changes gradually. The third law is the law of the limiting (restricting) factors: the most important for the distribution of the species is the factor whose values are minimum or maximum. For example, in the steppe zone the limiting factor of plant development is the hydration (the value is minimum) or soil salinity (value is maximum), and in the forest – its nutrient elements (the value is minimum). The laws are widely used in agricultural practice, for example, the choice of plant varieties and animal breeds, which can be used to grow or breed in a particular area.

Author's supervision – the control of design organizations or individual designers over the execution of construction, reconstruction of landscaping objects; for the author's supervision it is envisaged separate payment, which is conducted in accordance with applicable laws and regulations.

Autogenesis (genesis) – evolution as the result of internal factors.

Autoregulation – the interaction in the natural system, based on direct and reverse functional links that provides a dynamic balance or self-development of the whole system. It is performed on the principles of system management. Phytocoenoses autoregulation is the ability of plant communities to regulate their state and internal processes of phytocoenogenesis.

Autotrophic (heterotrophic) microflora – a part of microbial soil coenosis that unites microorganisms that carry the life autotrophic (heterotrophic) nitrification and other processes.

Autotrophic microflora (heterotrophic) **–** is a part of the microbial coenosis of the soil, which unites microorganisms that undergo the autotrophic (heterotrophic) nitrification and other processes during the life cycle.

Autotrophs – organisms that synthesize substances of their bodies from inorganic components; the metabolism inside their body is provided by using solar energy (heliotroph, phototroph) or by the use of energy that is released during chemical reactions (chemotroph) of ammonia oxidation, hydrogen sulfide and other substances contained in the water, soil and subsoil.

Autumn soil cultivation – ploughing in summer and autumn before sowing spring crops. Using this method of ploughing it is necessary to conduct activities to facilitate spraying surface runoff .

Avenue – a straight road, walking or driving, planted on one or both sides with trees, sometimes in combination with shrubs. By appointment there are the main alleys, the entrance and secondary (review, ring, walking); by structure the avenues can be symmetrical and asymmetrical; simple – as a single roadbed and complex double or triple; by the vertical avenues can be of one-, two - and three-layers.

Axial system – is the entire axial track of the activity of the embryonic meristem and its derivatives, a chain of forming axial elements of woody plants , the starting point of which is the axis of the embryonic bud, and the final one is a sprout with a leaf . The structure of the axial system of perennial plants is formed gradually during the annual growth and reflects the hereditary (genetic) fixed rhythm of ontogenesis and the order of switching the meristem operation, which determines the specificity, or type of sprout axial complex. Axial systems of different types (forms) of tree plants vary in number of stages, therefore, they can be divided into two groups: indefinitely branched – species (forms) of plants with an uncertain number of degrees in the axial system (more than 10-12) and defined branch – species (forms) of plants with a certain number of degrees in the Axial systems (less than 10-12). The first group of plants includes trees and shrubs with a large number of axial systems in the pedigree–axial complex, whose formation is provided by more or less regular (annual) sympodisation. Such tree plants as elm, Tartan maple, linden, etc. can withstand shoots shortening. The second group is made up of trees and shrubs with a relatively small number of axial systems in the sprout–axial complex. They are characterized by relatively irregular sympodization, which limits the total number of axial systems and determines their low-level structure. Trees of this group (ordinary oak, red hawthorn, acute maple etc.) can withstand trimming worse.

Azimuth – the angle between the given direction and the plane of the magnetic Meridian of the place of observation. The azimuth is calculated from the North direction of the Meridian by the clock hand movement from 0° to 360°. Magnetic azimuths are measured basally during orientation lines, plans, topographic maps of the terrain and during the surveying various parts, designed for green landscaping.

Acroter (acroterium)– sculptural decoration in the form of palmette or statue (form of a leaf of Acanthopanax plant (Acanthopanax sieboldianus Mak.), used in the corners and at the top of the pediment of the building.

B

Bacteria – microscopic single-celled organisms that do not have well-defined nucleus. According to the classification of the Canadian bacteriologist R. Murray (1984), which is based on the structure of the cell membrane, Bacteria form Procaryota kingdom with 4 divisions: Gracilicutes, including Cyanobacteria; Firmicutes; Tenericutes; Mendosicutes. Depending on the shape and placement of the following types of bacteria: cocci are round or ball like; diplococci bacteria are placed in pairs; tetracoca bacteria are placed by four; Streptococci bacteria are arranged in a chain; etc. Due to unfavourable conditions for growth and weakening the stability and woody shrub species bacterial diseases develop that affects the state of afforestation. For the prevention and treatment of diseases bactericides are used (chemicals adapted to specific pathogens).

Badland (eng. "Bad lands", the name comes from the fact that the lands mostly are unsuitable for agriculture) – dissected area with extremely difficult terrain passable, especially characteristic of pre – or lowland composed of loose clay and loamy sediments.

Balance holder – specifically authorized, on a competitive basis by state or local authorities organs, organizations, which are responsible for the maintenance and preservation of green plantations on subordinated territories of green farm.

Balance of the landscape – is a relatively stable state of the natural landscape, which is influenced by external factors, on the one hand, and the processes of self-regulation, self-organization – on the other; in agrolandscapes – under the influence of external factors (natural, anthropogenic), on the one hand, and a combination of self–regulation and management – on the other.

Balanced nature management – the process of practical, intersectoral coherent, systematic introduction into practice of socio-economic development strategies of society based on the principles of constant parity of weighted correlation of the society needs (balance of social, economic and environmental values) based on the results of knowledge of the laws of nature and, accordingly, the dynamics of natural processes. Balance requires a coordinated review of environmental, economic and socio–political aspects of natural resource management.

Balustrade – a railing fencing for balconies, terraces, stage marches, supporting walls, consisting of a series of curved bars – balusters; it is a kind of decorative handrails.

Bank protection plantations – strips of trees, shrubs or grass vegetation, re–created or conserved on the banks of ponds to prevent or halt the processes of coastal erosion. They consolidate the soil, delay the erosion in the rivers and reservoirs of topsoil and fertilizers that improve the habitat for beneficial animals, increase health and recreational quality of the waters adjacent to the territories and the actual water bodies. Depending on the elevation the width of bank protection plantations can be 50-300 m. The most effective are the integrated strips of willows, shrubs and some herbal perennial plants (reed, sedge, cattail, etc.).

Baroque – the art style in Western Europe of the XVI-XVIII-th centuries, which found expression in landscape gardening of Italy, France and other countries. The Baroque is characterized by the following traits: ornamental splendor, plasticity, contrast, emotion, desire to provide plant material, architectural form, ostentation. The characteristic elements of landscape compositions of the Baroque include: garden parterres, wallpapers, alleys, garden halls, outdoor theaters, garden sculptures, garden channels, pools and fountains, zoos, etc.

Basilica –the type of the ancient Roman building in the form of an elongated rectangular building, divided internally by longitudinal rows of columns or posts into several parts that served as court halls, markets, or stock exchanges.

Basin approach – the set of techniques in geography and environment studies, which are based on understanding the geographic shell, where the main integrating factor is water flow. Accordingly, the spatial structure of the geographical envelope system hierarchy is represented by the system of pools of different rank. It is convenient for balance payments, but its use is limited in areas with intense aeolian and karst phenomena.

Basin catchment or watershed – the area from which into this river or lake surface water and groundwater flow. It is limited by a watershed.

Basin flow regulation – the regulation of river flow in nature conditions as a result of temporary delay in the basin of river of melted snow and rain water.

Beauty – the degree of assessment of positive qualities of art works, which is characterized by numerous features: spuriosity and proportionality, harmony of parts and colours, brightness and novelty, feasibility and integrity, conformity of the content form.

Bed – a rectangular prism of the cultivated soil with sloping edges or flatter slopes, reinforced with turf or stone. In the monastery gardens of the middle Ages it was used for growing vegetables, herbs, flowers.

Belvedere – decorated by two–story pavilion observation point. Nowadays it is the so-called building on pillars without walls, but covered from the rain. Often belvedere is in the centre of landscape composition.

Benthos – the set of organisms that inhabit the bottom of the water pools and some of them are a source of nutrition for people and fodder for bottom river fish. It is taken into account while elaborating the composition of resistant to the influence of benthos of phytomeliorative plantations to protect the coast from erosion, battles of waves and destruction.

Berso – arched alley, formed by connected semicircular frames, which were connected with the trees (lime, hornbeam), as well as areas of the garden, surrounded by alleys. They were used in gardens and parks of the Baroque period.

Biennial-plants – plants undergoing a development cycle during two years; during the first year the vegetative organs (stems, leaves) are formed, during the second – flower and fruit, leaving the seeds. In some cases, these plants are able to flourish during the first year of life (e.g, two-tone violet), but the most powerful and abundant flowering they reach during the second year. These include Turkish carnation, Echinacea purpurea, medium bells etc. Biennials are a good planting material for flower beds in early spring period, as perennials cannot meet existing needs at this time. They also contribute to the continuity of bloom throughout the growing season.

Biocoenology – the section of ecology, associated with the study of the patterns of life in the communities, their population structure, energy flows and nutrient cycle. Biocoenology is closely associated with the disciplines of agronomy, ecology of plants.

Biocoenosis – a complex of interrelated populations of microorganisms, plants, and animals inhabiting a certain territory or biotope. It is a system that functions as a whole due to the interrelated metabolic transformations.

Biocoenotic equilibrium – is a relative stability of biocoenosis, which is ensured due to the dynamic equilibrium of antagonistic interactions of its components (species).

Biocoenotic optimum – the most optimum conditions that contribute to the normal life of a species or its population and ensure their maximum quantity and productivity.

Biocoenotical selection – occurs under the conditions of formation and functioning of biocoenoses selection of types and the formation of their populations for co-existence.

Biodesign of meliorative territories –the design of aesthetic appearance of agroforest landscapes on the basis of combining business and economic, environmental and social needs of society. Biodesign foresees the artistic design of agroforest landscapes by using different types of protective plantations and their properties when creating multi-cultural landscape with the formation of environmental quality of life.

Biodeterioration – the process by which living organisms whose activities cause a change (deterioration) of functional and structural characteristics of artificial or natural objects. Sometimes the concept "biodeterioration" includes violations of biocoenoses.

Biodiversity – the variety of living organisms from all sources of the biosphere, terrestrial, marine and other aquatic ecosystems and the ecological complexes a part of which they are; this concept includes the diversity within one species, between species and diversity of ecosystems. The Universal scientific definition is the following: the coexistence of different life indicators within taxon (filum) or on a particular area, estimated by a number of options, their mutual differences (average, variance), their quantitative ratio (frequencies).

Biogecoenosis – evolutionary system of interrelated and interdependent components of animate and inanimate nature with a peculiar structure, dynamics and exchange of substance, energy and information. It consists of 5 major components: climatop, edatope, phytocoenosis, zoocoenosis, microbecoenosis.

Biogenic substances – substances (chemical elements) that are a part of organisms and serve important biological functions in the process of life. In organizms 70% of the mass of cells is oxygen, 18% is hydrogen, 10% – carbon and trace elements. When excessive concentrations of nutrients in water sanitary conditions of water bodies significantly worsen and negative processes develop there, causing a number of deaths of the most vulnerable to pollution species. Water conservation forest plantations can prevent their pollution through the use of appropriate trees and shrubs in their composition .

Biogeochemical cycle – the cycle of chemicals from inorganic nature through plant and animal organisms in the inorganic environment.

Biogeochemical nutrient cycle – 1)a cycle of circulation of chemical elements in the external environment and with activity of living organisms. With the emergence of the technosphere biogeochemical nutrient cycle has turned into technobiogeochemical cycle; 2) cycling of chemical elements and substances carried out by living organisms. A major role in biogeochemical nutrient cycle is played by the primary producers (plants), consumers (animals) and reducers (Saprophyte organisms). It occurs in the trophic chains of the ecosystem; 3) the continuous circulation of chemical elements, which occurs due to the energy of solar radiation and is supported by the community of organisms connected by the food chain. It is manifested in the processes of nutrition, respiration, reproduction, death, decay, the interaction of living organisms at various levels of the organization. Biogeochemical nutrient cycle includes the processes of forming organic compounds from elements contained in the air, soil, water and subsequent decomposition of these substances, in which items move into mineral form. Through organisms the circulation of carbon, oxygen, hydrogen, nitrogen, phosphorus, sulfur, etc. takes place.

Bioindication – 1) the assessment of the quality of environment and its individual characteristics by biota state in vivo; 2) the ability of organisms to respond to changes in physical, chemical and environmental characteristics of the habitat, which affects the peculiarities of their growth, development and quantity of biotype.

Bioindicator – 1) a group of individuals of one species, by the presence, status and behavior of which the people judge about natural and anthropogenic changes in the environment, including the presence and concentration of contaminants; 2) botanical grouping , availability, condition or behaviour of which is the indicator of natural processes, the state of habitat or human–induced changes. Bioindicators are sensitive and selective as for the various factors of habitats (chemical composition of soil, water, air, climate and weather conditions) and can exist only in certain narrow limits of these factors changes (eg., lichens are indicators of clean air, some algae – of pure water). Using bioindicator , we can estimate the degree of pollution, the permanent control (monitoring) of its quality and changes.

Biological activity – the maximum manifestation by the organism of important biological functions within its range of tolerance to the main limiting environmental factors.

Biological activity of soil – the total indicator of speed of passing the biological processes that are determined by the intensity of soil "breathing".

Biological cadaster – a systematic collection of data about fauna and flora of the given area.

Biological cycles – periodically repeated in biological organisms and in their groups (particularly, in populations) changes in biological phenomena that have arisen in the course of evolution due to adaptation to cyclic changes in the conditions of the environment. There are daily, seasonal, long-term.

Biological diversity – 1) objective diversity, variability of species composition of biocoenoses of all terrestrial and aquatic ecosystems; 2) a set of all types of plants, animals and microorganisms, their groups and ecosystems within the territory of the country, its territorial and inland sea waters, the exclusive (marine) economic zone and the continental shelf. Biological diversity is divided into species, populations, coenotic and genetic.

Biological monitoring – a system for observing the state of the biotic component of the biosphere, its response to anthropogenic actions, deviations from normal, natural state at different levels (from a molecular to a group).

Biological potential of agro-ecosystems – the upper limit of biological productivity (and therefore crop and animal production), which can be achieved with the full disclosure of natural soils potential and natural grasslands through the environmentally justified introduced human energy. It depends on climate, soils and is subject to the law of limiting factors. The disclosure of biopotential is one of the main objectives of agroecology.

Biological production – the ability of organisms to produce organic matter during their life. Biological priduction is measured by the amount of organic matter produced per unit of time on the unit of area (t/ha/year g/m^2/day etc.). There are primary (created by plants and other autotrophs) and secondary (generated by heterotrophs) biological production . In the composition of the primary biological production gross production (i.e., the total of photosynthesis) and net. Biological production – "profit" that remains in plants after breathing. The more favourable environmental conditions, the higher is their "profit". In adverse conditions, of hot or Arctic desert plants spend on breathing up to 80%. Biological production of photosynthesis, and in favorable conditions with abundant resources, heat and moisture – not more than 30%. During the transfer of energy from one trophic level to another with the consumption on breathing and feces about 90% of the energy is lost. In addition, phytophages eat only 30% of plant biomass, and the remained replenishes the stock of detritus, which is then destroyed by decomposers. Therefore, the secondary biological production by 20-50 times is less than the primary. According to the primary biological production ecosystems are divided into four classes. 1. The ecosystems of very high biological production more than 2 kg/m^2 per year. These include the tall and dense reeds in the deltas of the Volga, river Don and Ural. 2. The ecosystems of high biological production – 1-2 kg/m^2 per year. These are lime–oak forests, coastal thickets of cattails or reeds in lakes, corn crops and perennial grasses grown with the use of irrigation and high doses of mineral fertilizers. 3. Ecosystems of moderate biological production – 0,25-1 kg/m^2 per year. This is the majority of crops, pine and birch forests, hay meadows and steppes, thickets of aquatic plants of the lake, etc. 4. Ecosystems of low biological production – less than 0.25 kg/m^2 per year. There are deserts of hot climate, the Arctic desert of Islands in the Arctic ocean, tundra, semi-deserts of the Caspian sea, the steppe pastures trampled by the cattle with low and grass stand, etc., mountain steppes that develop on soils. The most marine ecosystems have the same biological production distinguished from the yield and biomass.

Biological reclamation – the reclamation, aimed at the intensive increase of fertility of the destroyed lands and productivity of agricultural and forest crops by applying the system of phyto – and hydrotechnical measures.

Biological resources – biological components of the biosphere: producers, consumers, and reducents**.** Biological resources are quantitatively renewable (through reproduction, growth), but qualitatively non–renewable, because the losses are irreversible. For example, the loss of plants or animals species .

Biological soil degradation can be diagnosed using biological indicators of phyto-sanitary state of soil: contamination by viruses, pathogenic microflora, worms.

Biological stability of trees and shrubs – trees and shrubs ability to withstand the impact of extreme environmental factors (air and soil drought, soil salinization, abnormal temperature, harmful industrial emissions, etc.).

Biological system – is a system that contains interacting and interconnected living components that form a unit (genes, cells, tissues, organs, organisms, biocoenoses, ecosystems, biosphere). Biological system is characterized by integrity, relative stability, ability to adapt to environmental conditions, development and evolution. Biological system is an open system, the existence condition of which is the exchange of energy, substances and information both between parts of the system and with the external environment. The basis of self–regulation of biological system is the principle of inverse ties.

Biomass – the amount of living organisms substances accumulated in the population, biocoenosis or biosphere at any time. It is expressed in the terms of wet or dry mass, sometimes in terms of equivalent energy per unit area or volume. The amount of biomass and the speed of its increase characterize the biological productivity of species, communities or ecosystems. Biomass study is important for the rational use of biosphere resources and proper organization of nature protection.

Biomass of biocoenosis – the total weight of individuals of different species per unit area or volume.

Biometrics – the branch of biology that studies the statistical analysis of group biology phenomena , the section of variation statistics, the methods of which (probability theory, mathematical statistics) treat the experimental data of observations and conduct planning of quantity experiments. The basic method of biometrics is to select a particular statistical model, verification of correspondance with experimental data and analysis of statistical and biological outcomes resulting from the model.

Bionics – a science about using the knowledge concerning the structure and form of principles and processes of nature in engineering, architecture and design. The basis of bionics is experiments in modelling living systems. Bionics as an independent science is relatively young. It originated in 1960 at the international symposium in Deuteron (USA). The first works on bionics began to appear in the United States and the former Soviet Union in the early 70's. The source of inspiration for designers working in this style, is nature – a honeycomb structure, spiral sea shell, insect anatomy, etc.

Biont – a single organism (individual) that in the course of evolution is adapted to a particular environment (biotope). The term biont is used as an integral part of the compound words that determines the specific biotope of organism. E.g. geobiont (soil inhabitant), aerobiont (air inhabitant),hydrobiont (dweller of water environment), coenobiont (dweller of a certain coenosis, community), parasite (resident of another organism).

Biosphere – living organisms domain on the Earth, the biggest ecosystem. The term Biosphere was suggested by the Austrian scientist and geologist E. Suess (1875), but the coherent theory of Biosphere was created by V. Vernadsky (1926), who substantiated the geological transforming role of living organisms. The living organisms formed limestone deposits, deposits of coal and oil, accumulated free oxygen in the atmosphere. Biosphere covers the lower part of the atmosphere (the troposphere), the whole hydrosphere (fresh and sea water) and the upper part of the Earth's lithosphere. The upper limit of Biosphere is situated at the altitude of 6 km above sea level, lower – at a depth of 15 kilometers deep in the Earth’s crust (bacteria live in oil waters at this depth) and 11 km in the ocean. In comparison with the diameter of the Earth (13,000 km) Biosphere is a thin film on its surface . However, the main life in Biosphere is concentrated in a much narrower range embracing only a few dozens of meters. The concentration of organisms in it occurs in the layer the thickness of which is a few dozens of meters. This layer, where common plants are spread are called phytogeosphere. It is also determined as the totality of all living organisms of the Earth that are in interaction with the physical environment of the Earth as a whole to maintain a stable equilibrium, getting energy from the sun and emitting it into space. According to V. Vernadsky, Biosphere is "a shell of life, the region of existence of living matter."

Biosphere changes – the changes of physical and chemical characteristics of the biosphere during its development. In historical aspect the scientists distinguish several stages of biosphere changes, ending by the ecological crisis and environmental revolutions: human impact on the biosphere as usual biological species; intensive hunting without changes in ecosystems during the period of mankind; changes in ecosystem processes: grazing, vegetation changes as a result of burning etc.

Biostasis – the ability of living organisms to withstand the environmental changes and remain unchanged. E.g. to maintain immunity, the ability to acclimatization and etc..

Biosynthesis – the formation of organic matter in living organizms under the action of biocatalysts– enzymes; a component of the metabolism of plants, animals and microorganisms.

Biotic factors (biocoenotic) – a set of conditions of plants influence, the influence of animals, fungi, microorganisms directly or indirectly due to the change of the abiotic medium on the same living objects.

Black forests –the shady forests of deciduous trees and shrubs on unpolluted lands. They also include mountain forests with a predominance of larch and aspen.

Bonsai – the art of growing bonsai in small containers indoors. The authorship of bonsai idea belongs to China. There are different opinions about the origin of this art. According to various statements the beginning of its history was about 4,000 years ago. The most suitable ones are pine and maple, as they are the least demanding. Juniper, Cryptomeria, citrus trees with small fruits, ginkgo, beech, etc. are also grown. Bonsais are divided into three groups: up to 15 cm – dwarf, up to 30 cm – small and medium – from 30 to 70 cm. The largest bonsai grow up to the height of 90-180 cm .They are– mostly very old trees aged 100 years.

Border – a narrow strip of low–growing plants that framed the road, flower beds and parterres, and emphasizes their linear pattern. The height and width of the curb - from 10 to 100 cm; the most common is the height of 10-50 cm, the width of 30-60 cm.

Bosquet – 1) is the garden area, surrounded by regular paths, characterized by geometric planning – a rectangle or square. Its interior space is occupied by trees and surrounded by ordinary planting hedges or walls. Plantation inside the bosquet can be regular or landscape. There are often internal roads related to the general network paths; 2) the element of landscape design, a plot or regular park planted with decorative purpose a thick group of trees or shrubs that are ornamental due to formation of solid form green walls in the form of equal walls (wall), geometric volumes, sometimes imitating architecture with arches and towers etc. There are generally two types of bosquets: an artificial grove – a group of ornamental trees and shrubs on the lawn or a flat pitch and "cabinet" when the plantations are located around the perimeter. Bosquet of shrub species was the primary motivation of regular parks in the XVI-XVIII-th centuries. Then the confined space inside bosquets was called not only "office", but "green rooms". To create bosquets small–leaved linden, spruce, yellow acacia (Caragana), common barberry, blue honeysuckle, hawthorn, Tatar maple or golden currant were often used.

Botanical Garden – a scientific and research , educational institution that also serves as a place for relaxation of urban population. There plant resources of national and world flora for enrichment of agriculture and forestry, gardening, green landscaping by new crops and varieties, and perfume, medical and chemical industry by raw materials are studied. Important place is occupied in the work in botanical gardens by the study of questions connected with green plantations in cities and other settlements. Firstly attention is focused on the issue of expanding the range of plants assortment used in green landscaping through the introduction of types and forms, especially valuable in relation to decorative and stable in urban environments. In Ukraine there are 17 botanical gardens of national importance with the area of 1912.1 hectares.

Botanical nature monuments – the individual items of vegetation cover and flora (unique trees, species, plant communities) which have special scientific, cultural, educational, historical or aesthetic significance and are protected by the state. The mode of these objects protection implies their preservation in its natural form, preserving habitat conditions in general and creating safety zones around them.

Boulevard – a linear object with a longitudinally elongated roads planted with the rows of trees, rarely – woody groups. Their monotony is broken by the introduction of a variety of accents – flower gardens, sculptures, buildings, water reservoirs. Depending on the location of boulevards in the city, their purpose and planned characteristics there are rectilinear and circular boulevards, walking and transit, coastal types. The First Avenue, which stretched from the gate of Saint–Denis to the Bastille, was created in Paris and established in 1670 by the architect Vauban on the site of the former city ramparts. In the nineteenth century boulevards appeared in many European cities becoming an integral part of urban green landscaping and busy place for rest of the urban population.

Boundary of the ecosystem – is the transitional belt, within which the ratio of environmental components, environmental factors and species composition of the biota changes.

Bouquet – a group composed of cut flowers, which will be in the hands, special containers or attached to cloths. Functionally they are divided into bouquets boutonnieres, bouquets for brides, for gifts, for anniversaries, mourning ones etc.

Bouquet plantations – the method of forming a compact or dense groups of trees and shrubs by planting in one place a few plants with the aim of creating compact spaces. Another way is cutting a tree or a bush near the soil to encourage plant tillering.

Boutonniere – a miniature one-side bouquet with the diameter of 4-7 cm, which is attached to clothes or hair. They are made of several small flowers (lilies of the valley, fragrant pea, miniature roses, violets**,** snowdrops, carnations) or one or two large carnations, roses; especially beautiful are different varieties of camellias and orchids.

Breakdown –is a large disjunctive dislocation of the crust that extends over a great depth, length and width. It predominantly passes between different tectonic structures and develops for a long time.

Brown forest soil– soil, which is formed in the mountains and on well-drained plains in deciduous and coniferous forests under conditions of humid temperate climate as a result of formation of gray brown soils.

Brown-Blanche scale – is a ball system for the combined estimation of projective coverage and number of species.

Brushwood – a tree or trees that are piled up by the wind with throwing out the root system from the soil.

Bud – embryonic shoot, which consists of basic rudimentary elements. Bud is classified by the structure into: 1) closed that are covered with protective scales (in most plants); 2) open (naked), in which cover scales are unavailable (Pharynx, Viburnum lantana); by the placement on the stem: 1) apical placed on the top of the stem (most plants); 2) lateral, situating on the side of the stem of the leaf axils. By appointment the following types are distinguished: 1) vegetative, from which the shoots develop; 2) generative, from which the flowers or blossoms (e.g. cherry, etc.) appear; 3) vegetative–generative, which lays several metamers of shoot, and cone growth gives rise to embryonic flower or inflorescence (lilac, elder, walnut).

Budding phase – a phase in plant development, during which the flower buds are formed and developing form flowers.

Budding, curling, scoring – the main method of inoculation of plants, attachment of a bud of one plant (inoculations) to another (rootstocks); it is spread in ornamental gardening in the reproduction of roses and other flowering plants.

Buffer area – 1) the area around the biosphere reserves, where economic activity is restricted; 2) the area with the natural or partly altered conditions of the landscape that surrounds the most important parts of the ecological network and protects them from external negative factors of natural origin or caused by human activity.

Buffer belts – areas of the soil surface, characterized by higher anti–erosion resistance comparing with other adjacent areas. They are created on steep slopes to disperse the surface runoff and slow down its speed and reduce the destructive potential. In the districts of deflation spreading buffer belts are used to prevent soil blowing.

Buffer zone – a special area, adjacent to the boundaries of the historic park, memorial, reserve, designed to distract visitors of the object, which is under the state of protection, in order to protect it from excessive recreational load; often it serves as a park area for free leisure visitors.

Bulb plants – plants of families of lily in which the root system was formed in the form of bulbs. (in Ukraine: lilies, snowdrops, tulips, daffodils, winter in greenhouses and rooms). The propagation of bulbous plants is mainly vegetative – by young bulbs, separate scales of bulbs, axillary bulbs. Green foliage in bulb plants should not be cut off, because its premature removal weakens the bulbs. In most plants, this type of leaves dies after flowering.

Bulengrin – a regular plot in the park, which is a variety of parterre, somewhat reduced relatively to the level of the track that surrounds it. The central part of a bulengrin and its slopes are decorated with lawns.

Bussol – geodetic instrument, which measures the magnetic azimuth (rumba) lines and determine the direction of the magnetic meridian. It is used when surveying areas designated for planting, linking the individual buildings, trees, measuring angles.

C

Cabinet – the element of internal space landscape composition of bosquets formed by bobbed "walls" with lime or hornbeam. In French Baroque parks and gardens most of the rooms were decorated with parterres, pools, sculptures and garden buildings in the XVII-XVII-th centuries .

Cadastre – a systematic collection of data that includes qualitative and quantitative description of objects, phenomena. It is prepared by continuous or periodic observations over certain objects**.**

Cambium – the thin membrane located just beneath the bark of a plant.

Capacity of the biotic ecosystem – the ability of an ecosystem to accumulate a certain amount of resources converted into energy, necessary to maintain the structural diversity of biotic groups; the capacity of ecosystems to define primary production. Forest plantations mainly increase capacity of the biotic ecosystem due to a more intensive exchange of energy.

Carbonate soil – the soil in the upper horizon of which carbonates of calcium and magnesium are placed.

Care-formation cuttings in parks – is a kind of reconstructive felling (lighting, cleaning, thinning out and passage felling). They are periodic. With their help, the people form a new image of the plantations, improve the decorative qualities of the stands, and remove periodically the trees that have fallen behind in growth, which have lost their decorative character or interfered with the growth of the best specimens. With the help of cuttings the people create a complete decorative plantations.

Caring for plants – a complex of technical measures aimed at the restoration and adaptation of the plant organism in the conditions of the environment influence and forming the image of object in general according to the project; the care after planting (sowing) – for several years to ensure survival; the care in the process of operation of the object during the plants life.

Carpet (landcover) plants– low-growing creeping herbaceous plants with decorative leaves or floriferous, tolerate clipping; they are used to create patterned parterres, flower beds, perennial borders and rock gardens.

Cartouche – an ornament in the garden parterre of the XVII-XVIII-th centuries, which resembles by the shape a half-opened bundle of curls. In the centre of the cartouche the monogram (emblem) was placed, an emblem of the owner of the garden of XVII-XVIII-th centuries.

Cascade – a special many–stepped structure of stone and concrete designed to dropping water jets in places with fast flow of natural rivers, streams, artificial water channels. It is used in the terraced parks.

Castles gardens (medieval) – were arranged inside their territory. They were small and locked. Flowers were grown there. There was a water source – a well, sometimes a small pool or a fountain.

Catchment area – limited by the watershed lines the earth's surface, where the surface water and groundwater flow into a certain water body (a river, a lake etc.).

Celestial zone – is a functional zone of the city, which includes residential areas, administrative, public, cultural, scientific, educational and sports centers and green public spaces.

Cellulosolytic activity of soil – the activity of the process of destruction in the soil of the biopolymer fiber $(C_6H_{10}O_5)\cdot n$.

Cemetery (columbarium) – one of the element of plantations for special purposes; it is a park of memory, which is a specially isolated area that has favourable natural conditions for burying, transport communication and individual architectural and artistic characteristics depending on environmental conditions and traditions. Land for the cemetery is given outside the residential area at a distance of not less than 300 m from the people’s houses and public buildings. The distance from cemeteries to water intake, located below the relief, is not less than 500 metres. The sizes of the cemetery are determined from the calculation of 4-5 m^2 for one ordinary burial and 8 m^2 for one honourable burial.

Certification of protected natural objects – is the registration and description of the monuments of nature and other natural objects according to the defined scheme. It is the basis for developing inventories of valuable natural objects of the plans for their protection.

Chaco – is a territory with a park landscape on the border of tropical forests and savannas(campuses , 0South America).

Chanjar – thickets of spiny xerophytic shrubs (Argentina).

Chaos – in Greek mythology, this abyss is full of fog, darkness, stones, and other things that seem to have existed before the creation of the world. In parks an unsystematic accumulation of rocky clods, wild rocks (for example, in the park "Sofiyivka" the Valley of Giants, Great and Small chaos in the Vorontsov park in Alupka are created) .

Chapada – is a plateau covered with grassland and park forest (Brazil).

Chaparale – is a subtropical shrub formation of evergreen oaks and other species (California, Mexico).

Chemical equilibrium – a state of the reacting system, characterized by the constancy of the chemical composition in the conditions of preservation of its existence. Chemical equilibrium of the environment is one of the fundamental environmental factors of the sustainability of life, its ability to withstand entropy processes.

Chemical melioration – a system of measures for improving the soil and conditions for the development of agricultural crops using various chemicals.

Chemical optimum – composition and ratio of chemical elements in soil and water media, which provide the maximum productivity of the species.

Chemical soil degradation –is revealed in changing the characteristic for the given soil type qualitative and quantitative composition of chemical substances and is caused not sufficiently justified application of mineral fertilizers, ameliorants, pesticides, and technogenic emissions. Chemical pollutants are heavy metals that get into the soil with mineral fertilizers, chemical meliorants, etc., pesticide residues and their decomposition products. Chemical degradation can include dehumufication, that is, the reduction of humus content in connection with the unbalanced spreading and removal of it from the crop.

Children's park – a territory with a favourable sanitary-hygienic conditions, designed for games, entertainment, physical culture and for cultural and educational activities for children of school and preschool age, with entertainment features, attractions, small architectural forms that favours the best rest.

Chionophylls – organisms adapted to life in conditions of snow cover. They include many plants that can develop under snow cover (snowdrop, anemone etc.), evergreen grasses and shrubs of tundra, plants of the terrestrial cover of forests (algae, lichens, etc.), winter crops (wheat, rye) and some weeds (Common gracias).

Chinese Pavilion - an architectural park structure like a Chinese pagoda or a tea house. It is suitable for parks of a strict geometric layout that is French regular gardens and landscape.

Chisel soil tillage – the use of specially designed devices for soil surface tillage without turning the plate on heavy-sand, clay and gley soils.

Chlorine – a continuous or partial yellowing of green parts of trees or shrubs due to the reduction of chlorophyll in their leaves. The reason may be infectious diseases, the absence or inaccessibility of iron salts in the soil, other elements of mineral nutrition of plants, the damage of roots or vessels of xylem, the effect of extreme temperatures of air and soil, the pollution of soil, subsoil and air, harmful to plants with substances of industrial origin, etc.

Chromatic colours (colours of the spectrum) – red, orange, yellow, blue, purple, green. They are characterized by saturation and brightness.

Classical garden – today it is called the English style, as it demonstrates such features as: neat and sharp edges, then straight lines, ordered plantings, rectangular lawns, flower beds made in geometric shapes, straight floral borders. Basically, in this style, symmetry is observed in the compositions.

City boundary – is the outer boundary of the city lands, which separates them from agricultural lands, settlements and other lands of the unified state land fund (land of industry, transport, forest fund etc.).

City garden – a structural element of the city's green landscaping system, designed for the short–term recreation of the population; a limited area (from 2 to 6 hectares) and the location in the system of residential areas or a city center do not allow a wide range of functional areas; the main entrances to the garden are arranged in places of pedestrians concentration.

City park – is a green massif with a limited set of buildings for the maintenance of the population, intended mainly for walks and rest; the level of its improvement corresponds to the requirements of the parks of culture and recreation.

Classicism – an art style of landscape art that emerged in Europe in the XVII- th century and was based on the ancient art as the ideal model. This is the style of the court aristocracy and its culture within the period of absolutism. Its appearance is obliged to French gardener A. Le nôtre, who created wonderful Palace-Park complexes – Vaux-Le-Viconte and Versailles. This style marked the biggest prosperity of the regular park-building in the history of landscape construction. In Ukraine, this style was combined with landscape parks planning.

Classification of landscapes – As a basis of classifying landscapes-genetic principle is used. In Ukraine there are two classes of landscapes – plains and mountains. Within the classes types and subtypes of landscapes are distinguished according to their bioclimatic similarity by such ratio of heat and moisture, that cause the corresponding zonal distribution of land cover types, the course of exogenous processes, particularly the hydrological regime. The class of plain Eastern European landscapes combines the following types: mixed forest type; wide deciduous forest ones; forest-steppe; steppe landscapes with subtypes – the northern steppe, mid-latitude and dry steppe landscapes (the southern plains). Plain landscapes are divided into subclasses of low and highland landscapes; mountain landscapes into – foothill, lowland, midland, intermountain and coastal–slope landscapes. By differences in expression of local physic-geographical processes the types and subtypes of landscapes are defined. The essence of the types of landscapes is revealed through the main localities and their typological natural complexes formed by genetically related systems.

Classification of soils (genetic) – amalgamation of soils into similar classes according to the direction of the process of soil formation, soil morphology, mechanical composition of soil-forming rocks and other features; the classification system with such taxones as: a type, a subtype, a genus, a species and a variety of soil is used.

Classification of washed off soils – the distribution of soils according to the degree (intensity) of erosive processes development, which depending on the morphometric parameters of the relief (steepness and length of the slope, its shape and exposure , exceeding the watersheds above the local base level), the type of soil and its erosion resistance, the nature of precipitation character and other factors manifest in different ways.

Climate change – the process of deviations from established rates and patterns of alternating climatic cycles and parameters that causes component change of element characteristics of the climate and, as a rule, worsening the conditions for economic activities and residence of people. It is especially characteristic for anthropogenic landscapes, as microclimatic changes within it coincide in time and space with changing megaclimate. One of the characteristic manifestations is global warming of climate due to the so-called "greenhouse effect” from the accumulation of carbon dioxide over a natural level in the atmosphere. The characteristic processes are the desertification and the aridity of the climate.

Climatic optimum – a coincidence in time and space of quantitative parameters of the temperature regime, humidity, which are the most optimal for living organisms.

Climatop – 1) a set of climatic conditions, a part of the atmosphere, which is a part of the ecosystem; 2) a district with specific climatic conditions.

Clump of trees – 1) in a regular park – an open area of lawn bordered by clipped shrubs and trees; in the landscape park – a fairly large group with a loose arrangement of trees and shrubs (over 11-13 trees); in the massif – a homogeneous group of trees or bushes among mixed plantation. Clumps usually are groups of one species, which often represent a transition element from the massif or grove to an open space. They can be of the same composition as a massif or a grove, or can contrast with them (spruce massif and birch clump); 2) a separate area of forest park, botanical garden, arboretum.

Coenophobes – are species that are involved in early successions characterized by high ecological plasticity, which are less specialized and do not occur in mature biogeocoenoses.

Coenopopulation – a set of individuals of one species of biogeocoenosis, characterized by internal exchange of genetic information, stability of number fluctuations, age and sex composition, biogeocoenotic (trophic, allelopathic, consortia) ties with other living components of biogeocoenosis and abiotic environment in the evolutionary process. Coenopopulation is normal – independent of the appearance of rudiments from the outside, that is, capable of self–sustaining by seed vegetative way or both. The regressive coenopopulation is such that has lost its ability to self–support both by seed and in vegetative way, depending on the external seed dropping.

Cold resistance – is the biological property of vegetation to withstand the temporary or prolonged reduction of air or soil temperature. There are natural and obtained cold resistance, which are produced in plants by tempering and on the basis of optimum growth conditions.

Cold winds – air streams with low temperature, which isn't characteristic for the given season, causing damage to natural and cultivated vegetation, livestock and the population. Under their prolonged spreading radiation frosts take place.

Colour of the plants – the availability of coloured substances, pigments in cells, tissues or organs . The most common among plants is green colour, which is due to chlorophyll. Various colour of flowers and fruits caused, for example, by carotenoids, flavonoids and other pigments, plays a significant role in attracting insects that pollinate flowers, and birds, contributing to the dissemination of fruits and seeds.

Colouring – the ratio of colours in the landscape by tone, and saturation. There are a warm colour (warm colours dominate) and cold (more cold colours).

Combined type of planting – a type of planting, in which different types of plantations are included in the forest protection plantations. It is applied to areas with mixed environmental conditions.

Commensalism –a type of symbiosis, under which relationships for one organism are useful and for other are neutral. Under such type of relationship one organism serves for another as a place of attachment or storage, but does not provide food.

Common recurrence – the species of several phytocoenoses belonging to one association. It is expressed by the amount representing the result of the distribution of the sum of local recurrences on a number of phytocoenoses for which the local recurrence was determined.

Competition – a form of placing an order for the design on the basis of the conclusions with the aim of selecting the optimal design solution and the designer for the given conditions.

Complete moisture content of the soil – moisture content in the soil, under the conditions of full filling all pores with water.

Complete recultivation – the destroyed surface of the earth is restored precisely to the same state as it had before the beginning of mining.

Complex approach – a number of methods of empirical order, which do not have their principles. The complex approach reflects the organizational and methodological approach in research, design, production. The development of vocational education is carried out within the limits of existing knowledge of many sciences developing separately and, accordingly, having their own, not always coherent scientific principles.

Complex forest plantations – forest protection plantations, consisting, as a rule, of several tree and shrub breeds, forming 2-3 tiers.

Complicated landscape – is a picture within a horizontal angle of 28°, which consists of two or three simple pictures with different subjects, but combined by one plan into a **single whole.**

Components of the landscape – in fact, there belong a relief, soil, flora and fauna, hydrological objects and climate. The predominance of this or that component substantially affects the appearance of the landscape (for example, a large number of trees and shrubs creates a forest landscape, extreme overfall of terrain – mountainous or hilly, the presence of large hydrological objects– river or marine).

Composition – the creation of art work. In landscape art by composition we mean the location of the compositional forms in a certain combination which provides the harmonic unity of the organized space. Spatial decisions include a shape, size, weight, texture, position in space, colour and lighting. There are front, volumetric and deep–space compositions.

Compositional zoning of object area – zoning by traits of planning and architectural design of the organization on the basis of the principle of forming different areas in the park.

Composting – a biological process in which organic matter decomposes and accumulates nutrients; the development and course of this process are directly influenced by soil microorganisms.

Conditions of the environment – the external conditions defining the use by plants and other living organisms the factors of life. Abiotic conditions are inanimate nature that surrounds an organism or other object that affects it.

Conservation – a complex of measures in the processes of which the composition of a park remains unchanged in the form they are at the time of the survey, and buildings and a park adapt to new conditions. The term "conservation" is used in landscape architecture for the preservation and maintenance of the park composition without making any changes in planning volumetric and spacial design, but the growth of trees and shrubs will continue, and a park will change to some extent.

Conservation of lands is conducted by ceasing their economic use for a certain period of time and grassing or afforestation. In solving a number of questions one of the leading roles is played by forest reclamations as they have not only comprehensive environmental impact but also important social and economic aspects and are governed by adopted laws. A procedure of conservation of degraded, low-productive and technologically contaminated lands is defined. Degraded and low-productive lands, the commercial use of which is ecologically dangerous and economically inefficient are conserved. Conservation is also conducted on anthropogenic polluted lands on which to obtain ecologically pure products is impossible, and for people to stay on these lands is dangerous for their health. The long term irrational use of soils, unbalanced agriculture have resulted in the widespread development of erosion processes and degradation of soil cover in the country.

Conservation of landscapes – the removal from economic and other types of use with the aim of preserving them in their original, slightly changed or unchanged view. It is conducted by spreading the reserve regime to the landscapes.

Considerable trimming – is a periodic removal of all skeletal branches of a tree for formation of a new crown. All axial systems of a tree are cut each year at the level of second–third degrees. The creation of a new crown depends on the stock of sleeping buds on the trunk and its branches. This trimming is well tolerated by willow, linden, plantain, poplar, etc. Species of maple, sown chestnut, walnut can withstand such trimming only until the middle of the age. Polarization is not recommended for birch, beech, cherry, ash.

Consument – heterotroph organisms that feed directly or indirectly through other organisms by organic matter synthesized by primary producers.

Contour interval – the difference in height between two consecutive contour lines on the map that are used in the design and placement of agroforestry plantations in the area. It is determined according to the formula: $H= d\ tg\alpha$. It depends on the angle of inclination of the surface (α) of land use and size of laying (d).

Contrast – strongly expressed differences in the properties of spatial forms, particularly in their comparison. In contrast combinations of forms these properties are expressed brightly: pyramidal and conical vertical trees are shaded by bullet–like and weeping forms, the closed dark space of the forest massif strengthens receiving the sunny lawn, etc.

Cour d'honneur –the front yard of the palace, villa or castle in the form of a garden in a П–shaped form surrounded by buildings and separated from the street by a solid fence.

Coverage density – is the size of the individuals of a population, related to a certain unit of space (area or volume) of the studied biotope. That is, filling the soil surface with plants in the conditions of examination of the vegetation cover (sowing) from above.

Craft Scale – the distribution of trees of one population by the degree of domination and vitality in classes: 1 – exclusively dominant, singling out over the rest; 2 – make up the bulk of the tent of the tree stand; 3 – coincident, are included into the main part of the tree stand, but are shaded; 4 – depressed, reach the bottom of the tent; 5 – completely suppressed, almost devoid of branches, dying. The classification of trees in the forest stands by the growth indices (height, diameter of the trunk, crowns, etc.) includes five classes: I – the largest, dominant over other trees with thick trunks and strongly developed crowns (up to 5% of trees in the tree–stands); II – large dominant trees in tree stands with well–developed trunks and large crowns (30-40%); III – trees of medium size, coinciding; crowns occupy a transitional position from the upper part of the tent of the tree stands to the subordinate (20-40%); IV – trees, retarded in height, with narrow and undeveloped crowns (10-20%); V – dying and dead trees under the tent of a tree stand(up to 10%).

Crop plants – plants that are specially cultivated by a man as agricultural, decorative crops. They are so altered by plant breeding that they are not able to live in natural groups and grow only in the conditions created by a man.

Crop vegetation – is the vegetation of agricultural landscapes, which is formed mainly by agrophytocoenoses.

Crown density – the ratio of the sum of areas of horizontal projections of tree crowns of protective forest plantations (excluding the area of their overlapping) to the total land area of these plantations.

Culmination – the highest rise in the development of the composition. In landscape gardening it can mean the visual impression, which can be obtained during the movement along the main compositional axis and find the most impressive view point.

Cultivated phytocoenoses – are plant groups formed by planting local plants, which include lawns, flower beds, plantations of medicinal plants, forest cultures etc. Cultivated phytocoenoses require care, the absence of which can lead to the formation of unregulated undergrowth or a plenty of weeds.

Cultivated plants – cultivated plants, taken from natural groups, but are not altered in the process of cultivation by a man and do not lose their ability to live in natural conditions.

Cultivation of biogeocoenoses – is the degree of economic impact of a person, which depends on the type of activity, as well as the area of grouping, which has anthropogenic influence. According to the degree of cultivation, the following types are distinguished: olygohemoperobic, mesogemerobic, eugenerobic, polygemerobic, and metagamerobic biogeocoenoses.

Cultivation, tillage – processing the upper layer of soil without its turnover. It is used for loosening soil and controlling weeds during the preparation of the base for the lawn, in nurseries and flower farms. The result of cultivation is to improve water and air regimes of the soil, to increase the activities of beneficial soil organism.

Cultural biocoenoses– communities that are constantly under the human influence. Cultural biocoenosis are naturally less stable and contain a small number of species compared with natural.

Cultural landscape – a kind of anthropogenic landscape, deliberately changed and improved to meet the specific needs of society. It is carried out by introducing a complex of engineering, reclamation, nature protective as well as organizational and economic measures to provide the landscape with higher productivity, aesthetic, sanitary and bio–climatic properties. There are agricultural, urban, forestry, water supplying, industrial, residential, transport and militarized landscapes.

Cultural practices – a set of technical measures concerning the growing of forest plantations (landscaping, agricultural melioration and forest crops, recultivation, remediation etc.) for maximum increase of their functional efficiency and biological stability. Cultural practices have significant regional differences.

Culture phytocoenoses – artificial plant communities (of one or many species), field and garden crops, parks, gardens, vineyards, berries gardens or group areas, lawns, flower gardens etc. The term "culture phytocoenosis" was proposed by Kharkiv scientist Yu. P. Byallovych in 1936. The character is defined by life forms of cultivated plants. The long existence of cultures of phytocenosis without the support of a person is not possible. There are (according to V. P. Kucheriaviy) 9 main types: silvacoenoses – planted forests, plantations and nurseries; agrocoenoses – crops; pratocoenoses – cultivated meadows, hayfields, pastures, lawns; pomologocoenoses – gardens; vitacoenoses – vineyards; fruit coenoses– shrub plantations of decorative, protective or pomology nature; florocoenoses – flower beds; stripe coenoses – protective trees and shrubs stripes; aquacoenoses– grouping of aquatic plants of decorative, protective or household purposes.

Current repair – a complex of works aimed at preventing minor deformations and damage of the objects of well-being and their elimination. Cultural repair includes the following works: sowing of lawns up to 25% of the total area ; planting flowers, including perennials with all previous accompanying works (soil preparation, levelling, planting, watering); the removal of certain dried trees and shrubs; mistletoe clearing; planting new individual trees and shrubs up to 10% of the total amount available at an object; strengthening the slopes by the turf; the repair of water supply pipes with minor replacement of pipes up to 10% of the total length of the water supply; the repair of garden equipment, structures; the repair and painting small architectural forms; painting fences, parapets, etc.; the replacement of broken tiles , the removal of weeds, profiling tracks; small plumbing and carpentry work; the minor repair of greenhouses, the arrangement of greenhouses; the repair of the cover of the roadway, sidewalks, platforms, pedestrian and bicycle tracks; the correction of individual curbs and stubs; the replacement of separate drainage and water pipes; clearing of water reservoirs from mud etc.

Cutting (flower) parterre – is the only type of parterre, in which the main value was flowers. There are two variants: the parterres by the sandy pattern of which it is possible to walk, and the parterres, by the plane of which it is not allowed to walk, as in all other types of parterres. The drawing of the ornament is filled with flowers. It is planted along the perimeter with boxwood.

Cuttings – the most common method of vegetative propagation of ornamental trees and shrubs and some herbaceous perennial plants. There are winter (stiff) and summer (green) cuttings. Poplar, gooseberry, sea-buckthorn, currant, tamarix, willow, etc. are propagated by hardwood cuttings. The material for cuttings should be prepared in autumn, after the leaves falling and the sap flow stopping.

D

Decalcification of soil – the loss of calcium soil humus layer due to its leaching process in the lower layers. It occurs during acid rain, as well as while using physiologically acid fertilizers. It leads to the deterioration of soil structure and fertility decline (biological productivity). Thus there is weakening of soil erosion stability.

Decorative lawn – is an artificial grass cover which is created with an aesthetic purpose in gardens, parks, squares, forest parks, meadow parks, in the system of plantations in residential areas and other objects of green plantations in populated areas. They are divided into parterre, common garden–park, meadow and flowering ones.

Decorative qualities of plants – qualitative and quantitative indicators which characterize the plant during the formation of leaves, flowering and fruit bearing, as well as during the life cycle (size, shape, architectonics of crown); they are taken into account when designing the object , selecting the assortment, the layout of vegetation, the formation of the landscape.

Decorative sculpture – various shapes of plants, animals, fantasy characters set on game or content sites for aesthetic environment; preferably they do not bear any memorial values.

Decorative squares – small by area plantations, which are created mainly with architectural and decorative purpose: to obtain the area near the fountain, the memorial sign, billboard or cars parking.

Deep–space composition – one of the most commonly used in landscape gardening art; it makes it possible to reveal gradually the depth of space, perception of which is largely determined by the laws of linear and aerial perspectives.

Defoliation – fallen leaves, needles, branches, knots, bark, fruits and other remnants of forest vegetation in forest protective plantations during the year.

Degeneration – deep structural and functional changes in organisms caused by metabolic disorders, leading to the destruction of organs or their parts in the process of individual development. The result of the degeneration can be changes in the structure and processes of life, rebirth, degeneration etc. Senile degeneration is a phenomenon of degeneration that is observed in plants over a long period of vegetative propagation.

Degradation – the potential loss of any resource under the impact of hazardous natural and anthropogenic processes. It appears as a consequence of an unbalanced use of the resource and is the initial phase of degradation of the natural environment in general.

Degradation of the landscape – the gradual destruction of the landscape structure, which is accompanied by the loss of its ability to perform its functions. It is the result of unregulated environmental aspect of human activity (it leads to the formation of acultural landscape), and in some cases can also be caused by natural causes (for example, due to spontaneous natural processes – earthquakes, floods etc.).

Degree of disturbance of the landscape (territory) – is a degree of change in the processes of functioning and composition of the landscape as a result of external (including anthropogenic) influence. From the point of view of anthropocentrism it is possible to distinguish five stages (zones): 1) relative environmental well-being (the state of natural complexes provides the traditional forms of economic activity without damage to the health of the population); 2) ecological risk (there is a significant change in the properties of natural complexes, which leads to negative consequences for nature and man); 3) ecological crisis (change of properties of natural complexes poses a threat to economic activity and human health); 4) environmental disaster (negative changes in natural systems cause a violation of the traditional technology of economic activity, to significant increase of the incidence of people, the elimination of the damage requires a serious system of measures); 5) environmental catastrophe (negative changes in natural systems cause the impossibility of conducting traditional economic activities and human habitation).

Degree of soil degradation – is the interval of values of the soil degradation index, which shows a decrease in soil productivity within the determined limits. To compare different types of degradation, it can be listed on the ball scale.

Degression –the degradation of ecosystems due to external (exogenous) or internal (endogenous) causes. There are: exodynamic (when prolonged flooding, secondary salinization take place), anthropodynamic (hay, grasslands) and endodynamic (when biogenic salinization of the soil surface occurs). Its final stage – catacoenosis, after which the ecosystem is completely destroyed. The opposite process – demutation.

Degression of forest stands – the process of changing the structure, composition, productivity and stability of stands under the influence of external factors. There are pastoral – from over-grazing of cattle; recreational – from excessive irregular recreation; technological – from the harmful effects of industry and transport emissions; ruderal – from pollution by industrial, agricultural and municipal wastes. The scale of degression has been worked out.

Deluvial formation – accumulative geological deposits of laying products of weathering rocks, washed from the slopes by rain and melt water that occurs when the steepness of slopes is more than 2-3°C. In Ukraine, they occupy a considerable area on the slopes of river valleys and ravines of the hills. They are the objects of forest land reclamation and require differentiated actions for the creation and cultivation of forest plantations, but can be used for the creation of landscape compositions.

Demands to soil moisture –the biological property of agroforestry species as to the soil moisture during the establishment of protective forest plantations. Accoding to O. L. Belgard) there are six groups of breeds: Xerophytes (from the

Greek. xeros – dry) – pine, white acacia, gleditschia, etc.; Mezoxerophytes(from Greek. mezos – Intermediate) – elm, hips, buckthorn; Xeromezophytes– oak, forest pear, ash, fores apple; Mezophytes – hazel, small–leaved linden, maple, Siberian larch; Mezohydrophytes (from the Greek. mezos – medium and hygros – wet) – black and white poplar, aspen, elder, elm; Hygrophytes – willow, black alder, cherry, ash (marsh ecotype).

Demutation – the change of vegetation (animal world) after human interference and disturbances (degression), which leads to the restoration of the groups of the previous composition.

Dendrological park – is created with the aim of preserving and studying different types of trees and shrubs and their compositions in specific conditions for the aim of the most effective scientific, cultural, recreational and other use. In general, in Ukraine there are 19 dendrological parks of national importance, the area of which is 1543,32 ha.

Dendrological plan – is a part of the main drawings and is a project of the location of trees, shrubs, vines, lawn grasses, flower plants, whose main task is the explanation of the contents of symbols with precise instructions where and what plants to plant.

Dendrology – a botany section, that studies woody plants (trees, shrubs, bushes) and concerns the following aspects: the species composition of the region, both native and introduced from other areas; biological and ecological properties; geographical distribution; raw and decoration values; resistance to diseases and pests; suitability for forestry and landscaping. The course in dendrology is a basis in training specialists in forestry, park gardening and landscape architecture of secondary and higher education.

Denitrification activity of soil –the intensity indicator of the process of denitrification, which expresses the decrease in the mass of nitrates caused by denitrification microorganisms per unit of soil mass during a unit of time.

Dense plantation – the technique of forming a green space in order to create quickly trees plantations by a tree planting at a distance of 1-1,5 m from each other. Such plantations at the stage of trunk formation are more resistant and grow well. In the future, they require thinning.

Density of housing stock – is an indicator that is determined by the total amount of living space per hectare of residential area of the neighbourhood;it is set at the rate of 9 m^2 per person. With the increase of the surface of the building, the living space in the neighbourhood increases, for example, in the 5-storey building the area of the housing stock equals to 4800 m^2/ha, and in the 9-storey – 6300 m^2/ha; in mixed construction, the density of the housing stock can be increased to 6500-7500 m^2 / ha.

Density of the microdistrict development – is the percentage of the area occupied by buildings and structures to the entire area of the microdistrict. The density of the microdistrict development depends on the surface of the buildings. With the increase of surface area, the density of the building decreases, that is, the amount of unbuilt part of the territory for green landscaping is released. Thus, with the construction of a microdistrict, 5-storey buildings have a density of 20%, and 9-storey buildings – 17%.

Density of the solid stage of soil – is the ratio of the soil mass to the mass of the equal volume of water taken at a temperature of 4 °C. The density of the solid stage depends on the mineralogical composition and the content of humus.

Density of the species stand – a measure of the distance between the bases of individuals or different species on the account plot (distance method). A random individual is taken to be the centre, and from it the distance to four nearest individuals of a certain species is measured.

Deprivation – the loss of ecological resistance to biological groups as a result of its simplification.

Desalination – the process of release of groundwater and saline soils from easily dissolved salts. Desalination is achieved by means of reclamation, agrotechnical, water management and hydrotechnical measures.

Desert area (desert) – a climatic zone, in the natural landscape of which desert dominates: biomes with rocky, sandy, clay and saline soils with sparse and absent (in arid conditions) herbaceous and shrub vegetation. It is spread in the temperate zone of the Northern hemisphere, subtropical and tropical zones of the Northern and Southern hemispheres.

Desert tree breed – a wood species, the natural distribution of which is a desert.

Desertification – the decrease of the natural and resource potential of the territory below the conditional (admissible) level, which manifests itself in the degradation of vegetation; the deterioration of the biological productivity of land may lead to the emergence of conditions similar to the desert. Desertification is the result of anthropogenic causes in 75% of cases, and 25% – in natural ones.

Desertification of lands – is the locality loss of a terrestrial vegetation, under the conditions of its absence of self– renewal and the transformation of lands of the southern steppe regions of the country into semi-desert or desert lands.

Design Estimation Documentation– a set of documents containing technical data and the estimated cost of a new construction or reconstruction as well as expansion of the existing object. The content and scope of the Design Estimation Documentation are determined by the relevant guidelines for the development of projects and estimates for certain types of construction approved by the State Construction Committee of Ukraine. It includes project and estimated materials and is developed in accordance with the technical and economic grounding of construction expedience. Design Estimation Documentation contains an explanatory note, a general plan, work drawings , cost estimates for individual types of work and summary estimates.

Destruction of the landscape – violation of the structure and stability of the landscape under the influence of natural and anthropogenic factors. It appears in the conditions of negative changes of balance of landscape forming components (e.g., as a result of erosion and land degradation, recreational areas digression, nonrational use of vegetation, sudden changes in water regime etc.). It is evident in acultural landscapes. In the case of absence of corrective actions it can be completed by full degradation of the landscape.

Deteriorating cadastre – a systematic collection of information about the deterioration of the environment: pollution of air, water, soil, soil erosion, destruction of vegetation, etc. It is compiled on the basis of cartographic materials for a specific region, taking into account all pollution sources, violations, the extent of their participation in the deterioration of the environment, of their interaction.

Devastated landscapes – landscapes disturbed by human activities. They are often presented by career pits and dumps in the area of production of building materials (stone, sand, clay) and minerals (coal, sulfur). They often occupy large areas.

Digital map – a formalized model of the terrain, presented in the form of encoded numerically of the spatial coordinates area and their characteristics recorded on magnetic tape or other media. They can automatically get when processing aerial photographs or maps, used computer equipment, or any other software–controlled device. The possible area of application of digital maps: the creation of topographic and thematic maps, land cadastre, road, hydraulic, and other delights.

Directory plan – a list of major trends and issues that need to be addressed in the design of the restoration of the park with indicating the periods of recovery; directives must be prepared before the development of rehabilitation project on the basis of the inventory and study of park complex.

Dissonance – a violation of harmony, manifested in the disparity of forms and content of items, the appearance and phenomena of creation; the poor selection of groups of plants, disharmony and landscape architecture.

District – is a characteristic part of the whole , a part of the city (residential and industrial areas), a part of the suburban area (recreation area, recreation zone); the resort area is the territory with particularly favourable conditions for the organization of treatment and recreation, the area of the forest park territory, characterized by the presence of reservoirs for swimming etc.

Disturbed lands – lands that have lost their economic value or are a source of negative impact on environment because of the soil cover disturbances, hydrological regime and the formation of technogenic relief as a result of industrial human activity and other qualitative changes of lands state.

Disturbed landscape – anthropogenic landscape, formed on the site of natural in the process of inefficient exploitation of concentrated natural resources in it. It is characterized by adverse changes in structure and functions, it is the initial stage of transition to a developed form of the acultural landscape. The renewal requires measures to rehabilitate disturbed lands or other landscape–based components and optimize the links between them.

Dominant– is the main focus of the park landscape from the point of view of artistic expression, to which other elements must obey. The dominant can be by form, colour, ideological content etc.

Double – a significant increase in the number of flower petals. It can occur due to the transformation of stamens to petals (peonies, roses), splitting of stamens and

turning them into petals (carnations), splitting each petal into several (fuchsia), creating additional petals in places between normal petals (tulips, bells, lilies), etc. Double gives flowers a high decorative character.

Double leader – is two competing increments of continuation, each of which goes to apical dominance.

Drainage – is done with the purpose of rain and melt water removal in green areas. The excess moisturing is removed with the help of open and closed drainage systems. Open drainage system is laid in large parks and woodlands and has an extensive network of canals – drainage collectors and the main reservoir. The closed system consists of a network of drains, laid at the depth of 0,7-1,0 m from the surface. In this case it is also connected with a common collector.

Drought – is a prolonged and significant absence of precipitation, usually at elevated temperatures and reduced humidity during the growing season, that causes a decrease in moisture accumulation in the soil and, as a result, the deterioration of growth, sometimes the death of plants.

Drought tolerance – the ability of trees and shrubs to withstand low soil moisture for a long time without significant signs of disturbing their physiological state and viability. It is an important indicator in assessing the reclamation qualities of breeds.

Dry wind – a dry wind at a speed of over 3-5 m/s under the air temperature usually more than 23-25° C and with its relative humidity below 30%, which negatively affects the development of agricultural crops, seedlings in forest nurseries and forest plantations, as well as plantations in gardens and parks.

Dry apex – is a tree crown drying from the top. Dry apex is one of the main signs of weakening the vitality of the tree and is an early weakly manifested stage of its dying off. The infectious diseases, the damage of branches and roots, the biological aging of a tree, the lack of moisture in the soil or other unfavourable conditions of growth and development, which cause the leaves to die, can lead to formation of a dry apex . The dry apex sometimes turns into dry stand.

Dry-steppe landscapes – are a subtype of steppe landscapes formed in the conditions of insufficient humidity; natural–territorial complexes of dry–steppe (southern steppe) physic-geographical subzone. Dry steppe landscapes retain typical features of the steppe landscapes and are distinguished by the greatest aridity of the climate and xerophytic and halophytic vegetation, waterlessness, similarity to semi–desert landscapes, especially near the seaside. The main directions of nature use are irrigated agriculture, melon growing, driving away cattle breeding.

Duct – forest road clearing in the dense park or forest park, as well as and view along the alleys in parks of Baroque epoch and between groups of trees in the landscape park.

Dwarfism of plants – unusual for this type of plants stunting due to extremely growing conditions or artificially created habitat.

E

Ecidioclimate – the microclimate around the crown space of the same plant.

Eclectics – the use of items both of regular and landscape styles in modern landscape construction. Architectural and planning decisions in each case arise from the specific requirements of the architectural, spatial and functional order, and the most important – from the natural conditions reserved for the garden or park areas: for example, difficult terrain, as a rule requires landscape planning because it is inconvenient for regular solutions; modern parks, especially parks and recreation, parks, parks – exhibitions, sports parks, very often require regular planning. The same applies to many types of gardens and orchards.

Eco-efficiency – the ratio of the amount of energy extracted from the corresponding trophic level to the amount of energy entering this trophic level per time unit.

Ecological area – the assemblage of habitats, where abiotic environmental conditions are favourable for the existence of a particular species or a group of biogeocenosis.

Ecological balance – the quantitative and qualitative ratio of natural and changed by man ecological components and human environmental processes that lead to long–term existence of ecosystems of this type or its evolution in the course of succession. It is a conditional term "equilibrium" which in this case, doesn’t fully correspond to its meaning, as ecosystems and the biosphere in general are not equilibrium systems in their physical sense.

Ecological disaster – a complete disruption of the dynamic equilibrium in the natural biological systems that arises from direct or indirect effects of human activity. It can be a natural anomality (long rains, drought, etc.) or due to the accident at the significant technical objects (e.g., at the nuclear power station), which leads to adverse environmental and economic consequences and catastrophic changes in the natural environment and, as a rule, to the mass death of living organisms.

Ecological equilibrium – is a balance of environment–forming components and natural processes, which contributes to the long existence of this ecosystem or its development during the succession process. Ecological equilibrium can be disturbed due to various catastrophic changes in the environment or progressively under the influence of anthropogenic factors. The support of ecological equilibrium – is one of the main tasks of environmental monitoring.

Ecological factors – a set of environmental factors that affect a particular organism. There are : abiotic – climate (moisture, heat, light, etc.); edaphic (soil, water); geomorphological (relief); biotic – the influence of plants, animals, microorganisms; anthropogenic– man’s influence.

Ecological optimum – 1) the conditions under which species or a group of species have the highest viability and adaptation to abiotic factors; 2) the conditions under which this group has a number of advantages over others; 3) dynamic and balanced ratio of environment-forming components, that provides a natural balance for the growth, the development and performance of certain functions by protective forest plantations.

Ecological optimum of a weed – is the conditions under which the most optimum activity takes place and the highest vitality of the weed species is noted: growth, development, biological productivity, distribution etc. Climatic optimum is a coincidence in time and space of quantitative parameters of the temperature regime, humidity, which are the most optimum for living organisms.

Ecological principle of plants selection – it takes into account the relation of plants to the environmental conditions of the area where they will be planted: moisture and soil fertility, moisture regime, lighting, average annual temperatures, as well as the resistance of plants to environmental pollution.

Ecological regulation – is the establishment of permissible limits for changing the natural state of the environment without violating the conditions for its self–regulation, self–purification and self-renewal. It is focused on ensuring the quality of the environment (the degree of correspondence of natural and man–made conditions to the needs of society and living organisms of the biosphere). The tool of ecological regulation is ecological standards – scientifically grounded mandatory boundaries for the preservation of the structure and functions of the ecosystem of any hierarchical level, as well as all environmental components that need to be taken into account in economic activity. It consists in establishing the degree of maximum possible human intervention in the ecosystem, when the conservation of these ecosystems is ensured, the development of measures related to the legal definition of the volumes of any human impact on ecosystems that do not threaten the normal ecosystem functioning .The base for ecological regulation are environmental standards and regulation documents.

Ecological series – is a sequence of populations, species, groups or phytocoenoses along the environmental gradients.

Ecological stability – is the ability of the ecosystem (landscape) to counteract the abiotic and biotic factors of the environment (including anthropogenic). Ecological stability is considered as an ecological balance. The ratio of autotrophs (producers) and heterotrophs (consults and reductants), as well as the specific adaptation of organisms to each other and to the environment, is decisive.

Ecological system of nature protected areas – evidence-based system that provides favourable environmental conditions for the life of organic world, preserving rare natural sites, resources, or territorial complexes, meeting academic and cultural needs of the community. Ecological system includes monuments of nature, landscape art, botanical and zoological gardens and other small, but valuable objects of animate and inanimate nature.

Ecologization – is a process of gradual and steady implementation of systems of technological, managerial and other solutions to improve the efficiency of using natural resources and conditions while improving and preserving the quality of environment at local, regional and global levels.

Ecomorph –a life form of plants that emerged under the influence of certain environmental conditions and are reflected in their morphology (e.g., hydrophytes, mesophytes, halophytes etc.). It is important to apply them in primary phytomeliorative lands.

Econet – a single territorial system, which is formed with the aim of improving conditions for the formation and restoring the environment, the increase of natural resource potential of areas, the conservation of landscape and biodiversity, habitats and growing of valuable species of flora and fauna, genetic fund, the ways of animals migration through the combination of territories and objects of natural reserve fund and other areas which are of special value for environmental protection and in accordance with the laws and international obligations of Ukraine are subject to special protection.

Economic and biological estimation of trees –the determination of the degree of economic value of trees in the selection of cutting objects in the process of the plantations care by forest protective plantations. Trees are divided into the best ones, auxiliary and those that are subject to cutting.

Ecosystem – 1) any coherent and stable system of living things and nonliving components in which the external and internal cycling of matter and energy takes place; 2) a set of organisms and their conditions of existence that are in the relationships with one another and form a system of interrelated biological, abiotic phenomena and processes. A complex open system of living and non-living components of nature that interact through the exchanging matter and energy within a homogeneous area of the earth's surface.

Ecosystem approach – is a variant of the system approach to natural systems, based on the application of the appropriate scientific methodology, coordinated with the levels of organization of the biosphere, which include the necessary structure, processes, functions and interactions between organisms and the environment. In the field of sustainable management, ecosystem approach is considered as a strategy for integrated management of land, water and biotic resources, which promotes their protection and equitable non-exhausted use.

Ecosystem production – is the biomass produced by the ecosystem. It is divided into: the total primary production (gross product) – the total amount of organic matter and energy, fixed by all autotrophs of the ecosystem; net primary production (net production) – the same, but minus the substances spent on breathing by autotrophs; secondary production – the amount of organic matter produced by consumers (phytotrophs and zootrophs); net secondary production – the same, but minus the substances spent on breathing consumptions; stock of products– the amount of biomass accumulated by organisms in biocoenosis. From the economic point of view there are general production in the form of valuable organic matter, useful production and the stock of useful production.

Ecosystem productivity – is the amount of living matter that is formed in the ecosystem during the year per area unit or volume of water.

Ecosystem structure – is an integral part of the ecosystem, which determines the peculiarities of the flow of energy and the circulation of substances, interpopulation relations, the general view of the ecosystem.

Ecosystem vitality – the ability of ecosystem to withstand dramatic fluctuations in the abiotic environment, mass reproduction or long–term loss of separate species, and anthropogenic pressure (overgrazing, trampling, noise, etc).

Ecotone – the transition zone between the physiognomic peculiar communities (e.g., edge of the forest belts etc.). Ecotone is usually inhabited by organisms much thicker than the contacting communities.

Ecotope diversity – is determined by the distribution of species in various types of ecotops.

Ecotope selection – occurs on the free territory (in procoenosis) and plant communities (especially with open circles in the desert zone) under the action of external factors (nonbiocoenotic) environments (frost and drought).

Edaphic factors – a set of soil conditions that affect the development of plants: physical properties, chemical and mechanical composition, acidity, salinity, biotic conditions, fertility, humidity etc.

Edaphyte area –the range of habitats in which soil conditions are favourable for the existence of species, type of grouping, biogeocoenosis.

Edatope (type of forest plants conditions) – forest typology classification unit, combining forest and non-forest lands by soil (trophotopes) and hydrological (hyhrotope) conditions. The selection range of ornamental plants for green landscaping often depends on edatop features.

Edge of a forest – the extreme strip of plantations up to 100 along the border with areas without plantations. Biogeocoenologists regard it as a transitional band between adjacent forest and non-forest biogeocoenoses, and call it ecotone. This is the territory between the two ecosystems, within which many of their characteristics are combined (species composition of plants, animals), while others have a clearly defined specificity, which is conditioned by the change of environmental factors in the transition from a closed forest group to a forestless one.

Edificator – 1) a plant species in plant community, that defines its features, creates biological media ecosystem and plays an important role in shaping its structure (e.g, in a pine forest – a pine’, in a desert – feather**),** which is the same as the determinant; 2) species of animals and plants that plays a leading role in drafting the structure and function of ecosystems, without which it cannot survive for a long time. In this broader sense edificators can be represented by many organisms – dominants and those that play a decisive role in the group. To the edificator some soil organisms (e.g., nutcrackers, in the cedar forest) belong.

Effective soil fertility – the actual presence of nutrients available for plants and water–soluble compounds in the soil , which determine the potential yield of natural vegetation and cultivated crops of economic value.

Elementary landscape – a plot composed of one breed or drifts, located on one element of the relief, under equal conditions of groundwater, characterized by a defined plant community and one type of soil. The term is used in works related to research in the field of geochemistry of the landscape.

Eluvial landscape (according to classification of B. B. Polinov) – the elementary landscape, formed on elevated elements of relief, with deep occurrence of groundwater level. It is characterized by the receipt of substances mainly from the atmosphere, almostly complete absence of lateral influx of substances. In this group, according to the degree of geochemical autonomy and transit of migrating elements caused by the placement of this landscape in the relief, there are :1) eluvial geochemical autonomous flat raised elements of relief; 2) transeluvial geochemical subordinate of slopes; 3) transeluvial-accumulative of lower parts of slopes, depressions, with deep occurrence of groundwater.

Embankment – a building that borders the coastline of the sea or the river and is intended to provide a correct form to the shore, its strengthening, protecting against erosion, for convenient passage ,for mooring ships directly to the port area, facilitating the transfer of cargoes, as well as the transfer of passengers from shore to ship and vice versa. Embankments in cities-passes (streets), located along the shores and limited on one side by urban building or a park. Embankments as the buildings are performed mainly in the form of retaining walls, less often in the form of cross–sectional construction of the bridge type.

Embroidered parterre – is based on the creation of –ornaments borrowed from the Oriental rugs. This art, but on a smaller scale, was peculiar for the Arabs. The decorating picture was formed by low-cut boxwood in the background of coloured sand, pounded bricks, or wood coal. The dominant motif was stylized by botanical forms: branches, palmettes, flowers, various leaves of monkshood, lilies and flowers (tulips, roses, carnations).The faunal element was also applied: the feathers of birds, teeth of a wolf, sometimes dolphins.

Endemic area – fairly narrow area of distribution of species or other systematic group, biotic groupings.

Endemics – organisms species (individual taxones) that are found only in certain regions (for example, the endemics of the Podolsk height: Besser Aconite, Klokov birch, etc.).

Endogenous rhythms – biological rhythms caused by the rhythm of biochemical and biophysical energy processes occurring in cells of a living organism and do not depend on environmental factors. For example, the movement of plants organs .

Endophytes – plants living in stone rock (the algae which penetrate the thickness of the stones), plants (endomycorhiza) and within animals (bacteria).

Enfilade – a number of rooms in the Palace that are connected by a door, which are located on the same axis. In gardens and parks it is a series of separate, delineated plantations connected by passages, which are also located on the same axis.

Engineering–protective function of planting – is determined by the degree of protection which is generated by green plantations from adverse natural factors. These are protective plantations, which reduce the strength of wind inside and outside the city; plantations along highways and railroads, which protect them from the snow drifts; forest protective plantations; water control plantations that prevent soil erosion on slopes and destruction of banks of water bodies .

English (landscape) park – is used to observe patterns of nature. It is distinguished by a free placement of walkways, alleys and other elements of planning with the inclusion of wide ponds, lawns, and groves that are located in corresponding spatial system.

Ensemble – in landscape art it is a spatially and functionally combined collection of buildings, vegetation, aquatic elements and other components of the landscape, which form a complete architectural composition.

Entourage – an entourage, environment or plant background. Plant compositions in parks and gardens are often considered to be the entourage environment relatively to architectural structures or monuments.

Entries of water bodies – the increase of the biological productivity of aquatic ecosystems as a result of accumulation of nutrients of anthropogenic or natural origin in water.

Environment pollution – 1) introduction into the environment substances which are not peculiar to it and are not generated in the course of natural processes; 2) increasing the concentration of substances or energy (or any agent) over the norm.

Environmental (ecological) resources – a set of environment-forming components that provide ecological balance in nature.

Environmental culture – the culture of all human activities related to knowledge, development and transformation of nature. The level of environmental culture that appears in awareness of environmental issues and awareness of the need of compliance of ecological norms, favours the compliance with environmental legislation.

Environmental diversity – is a ratio of the number of individuals and species in a group.

Environmental factors – a set of components that in general characterize the potential of abiotic and biotic factors necessary for the development of landscapes. They are distributed by origin: cosmic**,** abiotic and biotic, biogenic, biological, natural anthropogenic, anthropic. By the environment of occurrence: atmospheric, hydrospheric, geomorphological, edaphic, physiological, populational, ecosystemic, biospheric ones. By degree of influence: lethal, extreme, limited, mutagenic, terratogenic etc.

Environmental monitoring – 1) collecting, processing, storing and analyzing information about the state of the environment, forecasting its changes and developing scientifically substantiated recommendations for the adoption of effective management decisions. Ukraine has established a state system of environmental protection. Observations are carried out by the Ministry of Environmental Protection and Nuclear Safety, other specially authorized state bodies, as well as enterprises, institutions and organizations whose activities lead to deterioration of the environment. Procedure for the implementation of the state MNP Is determined by the Cabinet of Ministers of Ukraine; 2) a system of monitoring and control of natural and natural-human-made complexes, as well as processes occurring in them in order to ensure the rational use of natural resources and the protection of the natural environment. As to the territory the following kinds are determined: local, regional, global. In accordance with the approach there are parametric, component, ecological, sanitary-hygienic, and other types. By methods there are: geophysical, geochemical, biological contact and non–contact distant ones. By nature of the object: natural reserve, forestry, aquatic, of natural complexes, agro-landscapes, reclaimed, industrial-technogenic landscapes, and other types are determined.

Environmental protection – is a complex of international and regional administrative, economic, socio-political and public measures aimed at ensuring the physical, chemical and biological parameters of the rational functioning of natural systems within the limits necessary for preservation of the optimum state of the environment.

Ephemeroids – perennial (mostly bulbous) plants with a short vegetation period (e.g., a common snowdrop, a tulip etc.).

Ephemerophyles – plants, which with the onset of drought lose the leaf blades (e.g., honey locust).

Ephemers – annual plants, the overall development cycle of which from seed germination to fruiting lasts several weeks (e.g. Senecio vernalis, some species of Veronica, etc.). The last adverse period they transfer at the stage of seeds.

Epiphytes – plants that live on other species of plants that are used as a substrate, but is not a source of their food. Lichens, mosses living on the bark and sometimes leaves belong to the typical epiphyte flora. In tropical forests epiphytes are represented by flowering plants (orchids) which often damage plants, that are inhabited by the plants providing shelter for insects which occasionally settle on the leaves, complicate assimilation.

Equilibrium – is one of the principles of constructing landscape pictures, the basis of which is the objects balancing on both sides along the conditional visual line. In regular gardens, there is a symmetrical equilibrium, and in the landscape – asymmetric and dynamic equilibrium .

Equilibrium soil density – the soil density, which is established under the influence of external and internal factors in the fields that are not processed for a certain time. The equilibrium soil density does not always correspond to the optimum density required for plants.

Espalier – the process of training a tree or shrub so that its branches grow in a flat, exposed pattern by tying, pinching and pruning the branches.

Esplanade –a green design that emerged in the nineteenth century. in place of the destroyed fortifications of the middle Ages.

Estimate – the main planning document that defines the size, target direction and quarterly distribution of the budget means used for the maintenance of green space objects and implementation of centralized measures for economic and cultural development. The estimates of expenditures are compiled in accordance with the forms developed by the Ministry of Finance in Ukraine for certain types of landscaping. By destination the estimates are divided into local, general, total and estimates for centralized activities.

Ethnographic park – an area designed to display unique examples of mode in the conditions of natural landscape , residential and other buildings of the past, including everyday life objects, tools and items of hand-made art (embroidery, crockery, ornaments etc.). In such parks, thematic exhibitions are organized and research work in the history of architectural art is conducted.

European Landscape Convention – the document adopted in Florence in 2000 by the European states with the aim of promoting the protection, management and planning of landscapes and organizing European cooperation on landscape matters. The Convention covers natural, rural, urban and suburban areas along with the land, inland waters and marine areas. It concerns landscapes that might be considered exceptional as well as conventional or abandoned ones.

Eutrophic plants (eutrophies) – are demanding to the soil fertility of plants that grow only on soils rich in humus and mineral elements.

Eutrophication of water bodies – the loss of water natural state by water reservoirs as a result of its contamination by organic matter from the catchment surface or as a result of transit of surface water, as well as increasing the level of formation of organic substances as a result of production and biological processes in water reservoirs.

Evapotranspiration – the amount of moisture passing to the atmosphere in vapor form as the result of desuction and further transpiration (physiological evaporation) and the physical evaporation from the soil and from the plants surface. Evapotranspiration is expressed in millimeters of water column and correlates with bioproductivity of ecosystems.

Evergreen plants – plants that remain green all year round. They include most conifers and many types of decidious plants: evergreen boxwood, Mahonia Holm, Laurel, Rhododendron, etc. Many representatives of evergreen sub-tropical and tropical flora (palm trees, dracaena, ficus, aucuba, citrus etc.) are used for landscaping of interior part of residential and industrial buildings, winter gardens.

Evolution of biogeocoenosis – a process of continuous, simultaneous and interrelated changes in the types and their relationships, the introduction of new species into the ecosystem, the loss of some species, the combined effect of the ecosystem on the substrate (ecotops), and other abiotic components as well as reverse impact of these changed components on the biota of the ecosystem.

Exogenous rhythms – periodic changes in the components of the environment (alternation of day and night, lunar phases, change of seasons etc.). Exogenous rhythms belong to the group of primary periodic factors that determine the biological rhythms (e.g, photoperiodism in plants).

Exotarium – a small area of a garden or a park which creates a temporary open-air exhibition of tropical exotics from the collections of the greenhouses; vases are disguised or deepened into the soil, giving the appearance of soil planting.

Exotic species – a term used relatively to plants domesticated in the area of countries with hot climate and other forest growth areas; they differ in decorative qualities(coniferous, evergreen decidious, beautifully flowering).

Explanation note – a component of design and budget documentation, which, in accordance with the regulatory requirements, should include the analysis of the existing situation and justification of project decisions and technical as well as economic indicators; it should include the names of designers from each section of the project, and in the case of subcontractors – the names of legal entities or individuals of subcontractors. The explanatory note should include the list of drawings and supplements; all drawings must be added to a special folder with a description of their numbers. The typical composition of the explanation note is as follows: initial data for design; project proposals; supplements.

F

Facies – is the smallest natural–territorial complex, within which the practically homogeneous ecological regime (relief, humification, microclimate, type of soil) and the biocoenosis characteristic for these conditions is maintained. Thus, each facies corresponds to biogeocoenosis, presented by a specific phytocoenosis (association). There are: 1) a part of the association by local sign of the dominance of one of the different species (Brown-Blance); 2) a serial group which develops in the direction of facies (Clements, 1916). In landscape architecture, detailed design is carried out, as a rule, at the facies level, or, more precisely, at the level of park associations and micro association.

Factor – is one of a set of environmental conditions that affect the state of forest biocoenoses. Among environmental factors are: abiotic (climatic, orographic, hydrological); biotic (relations between organisms – symbiosis, parasitism, neutralism, etc.); anthropogenic (human influence).

Factors of environment comfort – a set of diverse properties and circumstances that make the park environment the most suitable for recreation of the population. The main factors of the comfort of the park environment are: natural-climatic – solar radiation, humidity, wind, components of the landscape (natural vegetation, water reservoirs, relief); anthropogenic – proximity and degree of influence of industrial enterprises, transport and engineering facilities, gas pollution and smoke of the air basin, the level of artificial noise, the presence of sources of smells and heat, the state of the landscape; architectural and compositional – perception of the object, landscape environment, the elements of improvement, artificial lighting, colour decision, etc.

Fallen trees – trees falling with the roots from the soil in belt and massive forest plantations under the action of strong and stormy winds in which the force of the wind on the crown of the tree exceeds the force of adhesion of the roots in the soil. It is mainly observed when the wind speed is over 20-25 m/s.

Fallow – a field free from agricultural crops during a certain period of the growing season, which is cultivated in order to improve the physical state of the soil upper layer, the destruction of weeds.

Fauna – a collection of all kinds of animals historically formed on certain types of landscapes or their totality. By the place of their constant existence, separate taxon animals are distinguished. For example, entomo–, ornitho– and teriofauna etc. The composition of the fauna should be taken into account in the use of certain species of forest species and phytomeliorants, since it can affect the stability of established plant communities. The desert fauna is a kind of species composition of the animal world, adapted to the harsh conditions of the desert. The fauna of various desert biotopes are distinguished by the composition and richness of species. The richest fauna is the fauna of fixed sands, especially with woody and shrub vegetation; the poorest fauna is the fauna of naked moving sands and rocky (crushed) deserts. The desert fauna is characterized by a relatively large number of mammal species (mainly rodents, ungulates), reptiles (especially lizards, agami etc.), insects (double-winged, membranous, etc.) and arachnids.

Fence – a garden and park building designed to restrict the free access of visitors to the object, transport, animals, as well as to the protection against the trampling of individual flower beds, parterre compositions, slopes of reservoirs, etc.; besides metal and wooden fences, hedgerows, green walls, garlands, triangles with vines are used.

Fence plantations – are created when other categories of protective plantations in the belt of railways to ensure safety and economic performance of transportations are absent. They are placed 10 m away from the railroad at a height of the embankment not less than 2 m and at a distance of 30-50 m under lower height.

Fencing forest plantations – forest plantations of natural or artificial origin, located in the form of a fence near gardens, nurseries, vineyards, etc., to protect them from adverse natural or man-made impacts.

Fertilization – the introduction of organic or mineral substances into the soil to create the best conditions for plant growth. Deep plowing or digging up of the site is of great importance for the restoration of conditions , because the upper layer of soil is impoverished faster than the deep layers. There are full fertilizers that contain all types of nutrients required for plants (humus, poultry litter, various impurities from dust holes, etc.), and incomplete ones containing one or more but not all elements necessary for plant nutrition.

Fertilizers – substances of organic (biological) and inorganic matter which are used to improve the conditions of the plant nutrition in order to maintain their vitality and improve decoration. By its origin they are divided into organic and mineral fertilizers. The sources of fertilizers are agricultural residues (manure, urine of animals, bird droppings), peat, peat compost, green manure, chemical products (nitrogen fertilizer, superphosphate), products of grinding rocks and some industrial wastes.

Flora analysis – the classification of species of a certain area or coenotaxone by genetic, geographical, ecological, economic and other characteristics.

Florarium – is a special glass container in which plants are located. They can be of various shapes and sizes – from large show–windows that adorn the spacious premises of public buildings, to miniature ones, which are placed on tables or window sills. Floraria make it possible to create the necessary microclimatic regime for plants, which is different from the microclimate of the room. It makes possible to use a wide range of indoor plants, from unpretentious to those that require specific conditions and careful care (orchids) for gardening of interiors. At the bottom of the florarium there is a drainage layer and on the top of it is a layer of soil mixture, which corresponds to the selected plants. Plants can also be placed in pots that are masked by wood bark or moss. The intervals between pots are recommended to fill with sand gravel.

Floriculture – the industry of ornamental horticulture dedicated to growing flowers and decorative plants for flower beds, landscaping for internal buildings, and also for cutting; the science of the cultivation and breeding flowers. There are exposed and closed floriculture. In the first case we speak about the cultivation of annual, biennial and perennial ornamental plants that adorn the gardens, parks, private land plots etc.; floriculture in greenhouses is connected with growing plants in hothouses for flowers selling in autumn–winter and early–spring periods. Plants in hothouses are decorative–deciduous and beautifully flowering.

Floristic analysis – the full analysis of the species composition of plant communities.

Floristics – is a kind of decorative and applied art that is embodied in the creation of floral works (bouquets, compositions, etc.) from a variety of natural materials (flowers, leaves, herbs, berries, fruits, nuts) that can be alive, dried or canned.

Florocoenoses – cultivated phytocoenoses, formed on flower beds from ornamental grass plants. Such groups may be annual (in the case if only annual flower–plants are grown) and perennial .

Flowchart (**process chart**) – planning calculation, where in a precise sequence the order volume and the time of the work that must be performed to get the finished result – the creation of a particular element landscape construction (planting material, planting of trees, shrubs, hedges, flower beds, lawns) or care for them, as well as landscaping elements and small architectural forms – paths, borders, sculpture, benches, lamps and so on are defined.

Flower decoration – the decoration of the external space in front of public buildings, parts of parks, along pedestrian routes, sites, some areas at the exhibitions etc. by means of composing floral, herbal, decorative foliage, soil cover plants that are planted in the soil or ceramic vases, containers etc.; flowering shrubs, roses, clematis, low-growing species of coniferous plants can be also used.

Flower garden (flower bed) –a part of the garden or park, planted with flowering or ornamental plants. Annual and some perennial flower plants are planted mainly on specially prepared places, which are called flower beds. Narrow, extra–long beds are called ridges**.** The thickness of the soil layer in flower beds and ridges for planting flowers must be not less than 45-50 cm. The profile is horizontal or slightly up to the middle. The outer edge of the flower beds can be at the same level with the lawn or at 5-7 cm above it. In the latter case, a flowerbed is edged with turf or anchored with the special border.

Flower meadow – in the Middle Ages it was a vast grass meadows, surrounded by trees and bushes outside the castle; they were intended for games and meetings of the court youth, and also for knight tournaments. They received the name of "love parks".

Flowerbed – a flower garden of geometric shapes (round, square, rectangular, etc.), located in the most front areas of the park – on playgrounds, at the intersection of roads, in front of buildings, near the sculptures. They belong to the regular compositions. It is not recommended to locate the flower beds among the lawns in the landscape parks .

Flowering – the period in the life of plants from the beginning of the opening of the first flower buds to the death of the last flowers. During flowering, the flower is pollinated, and as a result, fertilization and the formation of fruits occur. Flowering is a major factor in plant propagation. Annuals begin to bloom during the 1st year of life, biennials – during the 2 nd. Among the trees, the oak blooms for the first time on the 30-50 th year of life, linden – on 20-25 th, birch – on 10-12 th. Most plants bloom in spring, summer and autumn. In some plants the flowers are opened in the morning, in others – at night (this phenomenon is associated with the adaptation of plants to certain periods of activity of insects-pollinators).

Flowering lawns – a type of grass shelter, which is arranged on the glades and meadows of large parks and forest parks, plantations in residential areas. They can be annuals (poppy, cornflower etc.) and perennials (white clover, daisies); you can apply the small bulbous plants –tulips, daffodils, crocuses. Cereal grasses in mixtures for flowering perennial lawns comprise 40-50%.

Fluctuation – is a variation in phytocoenoses of different years caused by unequal meteorological conditions (external and internal in relation to phytocoenosis), peculiarities of the life cycle of certain plant species, and also related to differences in the behaviour of animals and humans in different times in a certain area of the territory; the length of the cycle of fluctuations does not exceed 10 years (longer changes are considered as cyclic successions). T. Rabotnov (1992) suggested to determine the following types of fluctuations: ecotopic (climatogenic), phytocyclic, zoogenic, anthropic. Anthropic fluctuations are occasional short–term changes in a population from a certain typical condition, due to untidy human activity. Zoogenic fluctuations are changes of phytocoenoses, which arise under the influence of animals. Ecotope fluctuations are occasional short–term changes in the population from a certain typical condition, which are due to changes in the properties of the ecotope,that is often a consequence of human activity. Fluctuations of mycogenic and microbogenetic types are phytocoenoses, which arise under the influence of fungi, microorganisms, viruses. Phytogenic fluctuations are changes in phytocoenoses, which arise under the influence of other types of flower and higher spore plants. Phytoparasitic fluctuations are occasional short–term changes in the population from a certain typical condition, which are caused by the mass development of parasitic consortium. Fluctuations phytocoenotic – random short–term changes in the population from a certain typical condition, which are due to the peculiarities of growth and development of certain types of cultivated plants, and much less – weeds. Fluctuations phytocyclic – changes in phytocoenosis, which occur only in small areas, where there are species that can dominate during certain years when favourable conditions arise or in places where sprouts appear massively.

Forcing of plants – a special agricultural technique of cultivating flowering plants in the off-season with the use of nutrients accumulated by the plants in the soil in bulbs, rhizomes and etc. The forcing is carried out in autumn, winter and early spring mostly in the greenhouse, rarely in open soil. The best period for forcing plants is the second half of winter, when the day increases, and the plants dormant period is coming to an end. To bring plants out of dormancy and to accelerate their growth and flowering, it is necessary to regulate artificially the temperature and humidity of soil and air, lighting.

Forest antierosion plantations – group of target forest protection plantations designed to protect the soil from erosion.

Forest belts plantations – planting forest protective plantations, created by belts of various width and length.

Forest cadastre – the systematic collection of information about forest resources, a detailed description of large forests massifs.

Forest coulisse plantations – forest protective strips plantations, created on hilly sands to protect them from wind**.**

Forest curtain plantations – forest protective plantations of artificial or natural origin of arbitrary shape with an area up to 1 hectare, with the exception of forest protective belts.

Forest ecosystems – the most complex and highly productive ecosystems in which high mesophilic deciduous and coniferous trees dominate, forming a complex, groupings.

Forest garden protection plantations – are designed to protect gardens, vineyards, shrubs and fruit plantations from the adverse effects of harmful natural and anthropogenic factors. They are used both independently and in the complex of protective forest plantations. They provide an increase in yield of fruit and technical crops by 15-20% due to the creation of more comfortable microclimatic conditions during the period of flowering, pollination and maturing the crop.

Forest greening plantations – forest plantations, usually of artificial origin, created to enhance the decorative nature of the landscape or improve the microclimate, sanitary and hygienic conditions of the terrain.

Forest growing (**afforestation**) – is the creation of artificial plantations in areas that were not previously covered with forest vegetation. It is applied as a protective measure on lands of all categories (massive and protective forest growing on low–yielding lands – in ravines, on sands etc., as well as during land reclamation). In accordance with the main target function of the created forest plantations the composition of wood species, the scheme of placement and mixing them in the area are determined; the forest conditions of the allocated area are taken into account as well as the biological properties of wood and shrub species, and economic requirements for these plantations. The species formation of plantations depends on forest conditions. So, on poor sandy dry soils, pine trees are planted, and on fresh and moist ones – pines with a birch admixture; on fresh, sandy soils – pine-oak plantations, on rich loamy, mostly fresh and wet, – oak and oak-ash-tree plantations with the admixture of a yarrow, acuminate maple etc. Forest growing on the marginal-beamed lands is carried out , taking into account the slope and exposure of the slopes, the conditions of moisture, the degree of violation of the soil humus horizon, temperature regime, etc. Depending on the categories of forest-cultivated or forest-livestock funds, preliminary stages of soil preparation are used – agrotechnical, cultural, hydro–reclamation etc. With the deterioration of forest–based conditions, the duration and intensity of these activities increase. Forest growing importance is that established forest plantations perform a large water-protection, anti-erosion, field protection and social role and is a source of wood, technical raw materials and products of secondary use.

Forest massive stands – forest protective plantations of artificial or natural origin, located in areas of woody shrub vegetation of arbitrary shape with an area of more than 1 hectare.

Forest mountain protection plantations – forest protection plantations, located on the mountain slopes, protecting them from erosion.

Forest park – is a forest area, partially well-maintained, intended for mass recreation of the population, organized in a certain landscape three-dimensional system by gradual reconstruction of plantations, the organization of roads, paths, lawns, beaches.

Forest park economy is a separate branch of the forestry production, the main task of which is to create and preserve picturesque, stable and healthy plantations, to improve the state of reservoirs, to maintain the track-trail network, decorative plantations, structures and facilities. For realization of these tasks forestry, reclamation, gardening, architectural-planning, road-building and other measures are carried out. Their specificity is determined by many aspects, particularly, medical and biological, architectural and aesthetic, as well as forestry-taxing ones.

Forest plant conditions – a complex of abiotic, biotic and anthropogenic factors that determine the function of plant components of the forest ecosystem. Sometimes forest plant conditions are considered as a synonym to the conditions of the forest environment. Homogeneous aggregates of climatic and edaphic factors (moisture regimes, heat, granulometric composition of soils, mineral nutrition of plants, etc.) covered and not covered by forest land plots are united in type forest plant conditions – the basis classification unit of forest typology. Different combinations of characteristics of forest plant conditions are determined by certain forest-related effects that predetermine the potential productivity of forest ecosystems. Types of forest types are based on a regional principle, taking into account the schemes of forestry and forestry zoning.

Forest plantation – a plot of land intended for the cultivation of seedlings of wood and shrub species (large-sized planting material) or special purpose plantings.

Forest plantations near the farm – forest protection plantations , created for the protection of livestock farms from snow-drift etc., the improvement of microclimatic and sanitary–hygienic conditions of people's work and livestock keeping.

Forest plantations for the protection of water bodies – forest protection plantations, located on the banks of reservoirs protecting shores from erosion, water areas – from pollution, as well as regulating the hydrological regime of reservoirs and promoting their fullness.

Forest plantations for windbreaking – forest protection plantations, located mainly along the railways, reducing the negative impact of winds on the condition of the state of road farming and moving transport as well as improving comfortable conditions for passengers.

Forest plantations near the channel – forest protection plantations , created by belts along the channels to improve the conditions of operating irrigation systems, hydrological regime and reduction of the evaporation from the water surface.

Forest protection – 1. A system of measures for the protection of forest plantations, nurseries, forest crops, forest plantations, wood materials from harmful insects, diseases, environmental factors and other harmful effects. According to the Forest Code of Ukraine (edition of 2006), the protection ensurance and protection of forests lies on the forestry executive organs and local authorities, owners and permanent users of forests. Forest protection includes: forest–pathological monitoring, survey, forecasting, quarantine, forestry (increase of planting stability) and active (biological, chemical and physical–mechanical) measures of forest protection, economic and ecological evaluation of the results. Forest–pathological supervision is carried out to control the emergence, development and spread of pests and diseases in the forest, their locations, the state of plantations, as well as to compile surveys and forecasts for evaluating possible threats and timely planning, effective organization and implementation of forest protection measures. Forecasting massive harmful insects reproduction and the spread of diseases pathogen is to determine the potential threat of damage or loss of plantations for the timely conduction of preventive and destroying measures. Measures to increase the stability of plantations include: the selection of forest breeds resistant to insect damage and disease; the design of forest crops on a forest–typological basis, the selection of assortment of breeds, the optimization of plantations composition, genotypes and origin of seedlings, the growing regimes; the implementation of forestry measures in such times and in such technologies for negative impact on the forest ecosystem to be minimal; measures promoting the spread of entomophages. The systems of forest protection measures are developed taking into account the natural zone of the location of protection objects , forest plant conditions, the age of plantations. 2. A branch of knowledge about species composition, biology, ecology of trees breeds, insects, pathogens of diseases, considering the climatic and forestry conditions, the structure of plantations, and anthropogenic influences.

Forest protection plantations – plantations of forest protection of artificial or natural origin protecting natural, agricultural, industrial, communal and transport objects from the adverse effects of natural or anthropogenic factors.

Forest ravine plantations – forest protection stands, located on slopes, on the bottom and cones of removal of ravines for their rational use and prevention of erosion.

Forest reclamation – the afforestation of technogenically disturbed lands as a result of surface or aboveground mineral extraction in order to restore their natural state and further economic exploitation. It is an integral part of the second after the technical stage of the reclamation method, that is called biological. In this case, the resource renewal ability of various in properties and natural forms vegetation, which is used depending on the types of conditions of location. It is carried out mainly in the forest zone or in the conditions of complex technogenic relief, where agricultural reclamation is impossible.

Forest reclamation plantations – forest protection stands, performing forest-melioration functions.

Forest renewal – the process of creating forests on lands previously covered with forest vegetation. It is performed by natural, artificial and combined methods. Natural forest renewal is the most stable biologically and is a highly productive type. It ensures the preservation of a viable growth during felling and includes measures that promote the emergence of self-seeding and growth after felling. Artificial forest renewal is carried out by sowing seeds or planting forest seedlings and seedlings grown in forest nurseries. Artificially created forest stands are called forest crops, and the area intended for their cultivation is a forest-cultural fund. Combined forest renewal includes natural and artificial restoration on one area. There are the previous forest renewal, which is carried out under the tent of the forest before its felling; the next, one which is carried out on continuous logs and fires, and the accompanying that is conducted during selective and gradual fellings.

Forest sand-fixing plantations – forest protection plantations, created on mobile sands for their fixation and more rational use of their occupied lands.

Forest shore-protection plantations – forest protection plantations, located along the banks of the rivers, lakes and other reservoirs and gutters, protecting the shores from erosion, water from pollution and excessive evaporation.

Forest slope protection plantations – forest protection stands intended to protect the mountain slopes from erosion.

Forest soil-fixing plantations – forest protective plantations along the railways, protecting them from covering with tiny particles soil as a result of wind erosion of soils.

Forest stand wind firmness – the ability of forest stands to resist strong winds; it is provided by the formation of different ages, mixed stands with wind-resistant trees that have deep, extensive root system and strong barrel (oak, larch etc.).

Forest suitability of soil – is mechanical and chemical properties of the soil ensuring the possibility of growing forest trees and shrubs.

Forest suitable soil – soils without signs of alkalinity, salinity with the depth of impervious root screens more than 2 m without much carbonate horizons, not eroded or slightly eroded.

Forest type of garden and park landscape – is characterized by high closeness of plantations or areas of natural or seminatural forests. For each of these groups there is a number of the most important species that under natural conditions form forests. For example, dark coniferous forests are formed by European spruce, white fir, etc., light conifers – by common pine, European larch, etc., broadleaf – by ordinary oak, forest beech, etc. They can play the same role in parks, where the forest type of landscape has been formed.

Forest unsuitable soil – leached soils with saliferous horizons or with the content of soluble salts in the upper meter layer in toxic amounts with the depth of impervious root screen of which is less than 1 m. The growth on trees and shrubs are impossible or possible only after the sufficient soil reclamation.

Forest vegetation conditions – a complex of abiotic, bio– and anthropogenic factors that determine functioning of plant components of the forest ecosystem.

Sometimes these conditions are considered as synonymous with the conditions of the forest environment. Homogeneous by a set of climatic and edafic factors (humification, heat, granulometric composition of soils, mineral nutrition of plants etc.) are covered and uncovered by forest vegetation, land plots are united in the type of forest vegetation – the main classification unit of forest typology. Various combinations of characteristics of forest–based conditions determine certain forest–related effects that define the potential productivity of forest ecosystems. Classification of types of forest–based conditions is based on a regional principle, taking into account the scheme of forestry and forest-based zoning.

Forest zoning – functional zoning of forest areas for recreation and intensity of visitation. In the area of active recreation there are sport and play equipment, beaches, baths, adjacent area for walking or quiet recreation. Each zone is characterized by the corresponding intensity of visits (recreational pressures), particularly: a) intensive loading – 30 persons / ha and more; b) average intensity; c) weak intensity.

Forest-park belt – is a part of the suburban area, adjacent to the boundary of the city, which is used for short-term recreation of the population. It is also intended for the protection of residential areas and has an environmental significance. The width of the belt, depending on the size of the city, ranges from 10 to 50 km and more.

Forestry caring for plants– periodic thinning of forests to prevent deterioration of their growth, creating the desired composition and spatial structure.

Forestry landscapes – are characterized by the forestness of the suburban green zone, they increase its expressiveness. Natural forest landscapes, due to the expansion of their recreational functions and reconstruction, are gradually transformed into forest parks.

Forestry management measures – organizational and technical measures aimed at growth, restoration, protection of forests and plantations of protective forests, increase of their productivity and protective properties.

Forests of the green zone of the city – are suburban forest areas that perform protective and sanitary functions and are a place of recreation for the population. It is an indicator of the availability of forests in green zones : for cities, 200-250 km^2, large ones – 150, medium 100, small ones–100-70, and urban-type settlements – 70 km^2.

Forest-steppe area – a natural zone of temperate and subtropical belts, in natural landscapes of which steppe and forest areas alternate with a predominance of steppe ones.

Form of life – a set of plants (animals) species as systematically close, and distant with similar habitus, reflecting their historical adaptability to various environmental conditions. The external life form is characterized by general features of adaptation to the specificity of the place of consumption, the similarity of the main morphological features and behavioural patterns**.** That is, the vital form (biomorph) is the appearance (habit) of plants, which was developed under the influence of environmental factors and inherited. The term "life form" was proposed by the Danish botanist J. Warming (1884). Later it was developed by O. Humboldt,

A. Grisebach etc. The most spread is the system of life forms determined by K. Rauniker (1905), which is based on the position of the buds of renewal and the ends of the shoots relatively to the earth's surface. According to this principle**,** plants are divided into 5 groups: 1) phanerophytes; 2) hamephytes; 3) hemicryptophytes; 4) cryptophytes; 5) therophytes.

Formation of trees crowns in green plantations – a system of measures connected with the density of planting, mixing breeds of different intensity of growth and systematic trimming of branches to provide crowns of trees with the required shape according to a special project.

Forum – a square in the city center in ancient Rome, which was intended for trade, political gatherings and mass sights.

Fountain – an artificial structure for pushing water streams from a special opening, pouring and falling with different heights, slopes, interfaces and methods of spraying; the maximum height of streams of water should not exceed half the diameter of the fountain bowl, since at higher altitudes of the water stream and strong wind water enters the surrounding area, which prevents the access of visitors to the fountain; the flow of water in the fountains of the garden object should not exceed 50-60 l/s.

Frequency of occurrence – the ratio of the number of trial sites on which a certain kind occurs to their total number.

Front garden – a part of the plot of an individual dwelling house, located in front of the house, the size of which depends on the width of the plot and the distance from the residential building to the line of development. The width of an individual dwelling house ranges from 15 to 35 m, so the distance from the house to the street is about 5-6 m, and the area of the front garden can range from 90 to 210 m^2. In the gardens, as well as on the territory between the house and adjacent areas, it is recommended to plant ornamental trees and shrubs, arranging flower beds. Among the decorative trees a table, benches, a lounge for rest and outdoor stay can be placed.

Frontal composition – is, as a rule, one–plan, expanded into the width of the image in which the depth perspective is not expressed (the wall of the forest massif, which arose before your eyes).

Frost – the air temperature lowering to negative values in the evening and at night if the day temperature is positive. Early autumn and late spring frosts have a negative impact on woody plants, especially on forest crops..

Frutocoenosis – are bush plantations of decorative, protective or pomological nature, created in different types of functional landscapes. They can consist of one breed or several.

Functional (anthropogenic) landscapes – are landscapes that have been altered due to human economic activity: urbanized, communicational, recreational, agro–cultural, forestry, hydromorphic etc.

Functional type – the most integrated version of life forms of plants, firstly described by E. Warming and focused on the establishment of a limited number of types. This type is used in the conditions of aerospace monitoring.

Functional zoning of the territory – the allocation in the process of designing the areas (zones) different in its functional purpose (for sports, mass cultural events, children, quiet rest, walking etc.) .

Fungicides – inorganic and organic toxic chemicals used to control fungal, bacterial and viral diseases of ornamental plants. They are applied predominantly by spraying method and less often by the method of dusting. The most common fungicides are Bordeaux liquid, copper chloroxide, and others. All of the above mentioned substances are low-toxic for humans and warm-blooded animals.

G

Garden – is a green area (from 2 to 10 hectares) in the development zone, intended for the recreation of the population and transit traffic, with the possibility of saturation with spectacular, sports and park structures. Gardens in the complex of residential districts and neighbourhoods complete the network of parks. They are created mainly in those parts of the city, where there are not enough areas for the park.

Garden and park architecture – includes a variety of buildings and structures that are a part of a garden and park object: residential buildings (villas and summer pavilions), farm buildings (greenhouses etc.), engineering structures (stairs, bridges), water structures (wells, fountains etc.), as well as fences, retaining walls, balustrades etc.

Garden and park art – the art of creating or reconstructing parks (historical and modern), palace and park complexes. It is based on the ability to use the laws of composition and perspective, the theory of light and colour, rhythm and contrast using natural elements and artificial materials.

Garden and park landscape – is an organized space, limited by its own borders, allocated for park objects. Garden and park landscape is characterized by a certain set of components and elements and is distinguished from other parts of a park or a garden by its functions and its artistic image. There are the following types of garden and park landscapes: a forest, a park, a meadow, a garden, regular and alpine ones.

Garden and park paths – structural element of the object; they are divided according to the purpose into five classes: I – main, II – secondary, III – additional, IV – connecting trails, V – business; by design and type of coverage they are divided into tile, asphalt, stuffed with soft coated macadam. Paths are designated for transit pedestrian movement, a short rest, walks.

Garden of continuous flowering – a territory in a park or in a botanical garden, in which during the growing season, plants are selected – herbaceous perennials, shrubs, trees – by the terms of flowering in such a way that there is a gradual change of the flowering seasons (from early spring to late autumn), thereby providing a long decorative effect.

Garden soil – soil mixture , which consists of several components differing in mechanical composition and content of nutrients, depending on the needs of certain cultivated plants. Soil mixtures of different composition are used in greenhouses and for sowing, thinning, growing seedlings of annual and perennial ornamental plants of open ground and when growing container greenhouse plants.

Garden type of a garden-park landscape – gardens of fruit trees, shaped orchards and mono–cultural gardens (e. g. Rosaria etc.), which are located on the territory of parks. The most characteristic feature of this type of landscape is the geometric planning, the precise location of individual trees and bushes by rows, the use of varieties of plants, altered by centuries-old culture, so much that they differ greatly from the species of the natural flora from which these varieties are derived .

Garden–hippodrome (ancient Roman) is borrowed by Romans from Greece. In Rome, it lost its purpose as a venue for sports, but retained the shape of a rectangle with one rounded edge. The garden-hippodrome looked like a flat open space – a lawn with flower beds, framed by regular alleys and molded shrubs. On the periphery there were fountains, flower beds, wood-shrub compositions etc. The open space in the center provided an opportunity for their viewing.

Garden–labyrinth (medieval) – a mode formed in the monastery gardens and took a significant place in the future park-building. Initially, the labyrinth had the appearance of a pattern, the picture of which fit the circle or hexagon, and led to the center by a confused way. In the early Middle Ages, this figure was laid on the floor of the temple, and later moved to the garden, in which the tracks were divided by the walls of the hedge sheath . Subsequently, garden labyrinth spread widely in regular and even landscape parks .

Gardens of residential areas – are designed for periodical rest in the natural environment of a certain area of the population. The planning organization of the territory of such garden should meet the needs of the population in various types of recreation, provide pedestrian communication by the shortest route with a public center, public transport stops, workplaces. The area of the garden without a sports complex should be not less than 3 hectares .

Garden on the roof – is one of the most promising modern areas of green landscaping, which consists in creating plantations on flat roofs under conditions of providing a sufficiently reliable and durable hydro, heat and vapour barrier, as well as the corresponding carrying capacity of the building to the intended load. The most widespread construction of the garden on the roof :1 – roof material; 2 – protective film; 3 – drainage layer; 4 – geotextile; 5 – soil substrate; 6 – plants. When designing a garden on the roof one must take into account a number of features. For example, plants on roofs suffer from overheating due to excessive insolation and thermal effects of structures, as well as from freezing due to the insignificant thickness of the soil layer (30-35 cm).They also have to withstand significant wind loads. To combat such phenomena, it is necessary to introduce water facilities in the roof gardens, which cool and humify the air; provide active plants watering and drainage of the nutrient layer of the soil, as well as the shelter of the soil in winter or use mobile forms of landscaping of the roof; arrange windshield walls, vertical gardening, geoplastics; special species of plants that are well adapted to the special microclimatic conditions on the roofs (acute maple, common robinium, rhododendron, juniper, cypress etc.)

Garlands – flowers or green branches, woven in long strips. The custom of using garlands for decorations has been known from Ancient Egypt, then they were used in Ancient Greece and the Roman Empire, and later in the Baroque and Rococo periods.

Gas plant resistance – the ability of plants to withstand the effects of gaseous emissions and aerosols that pollute the atmosphere (sulphur compounds, nitrogen, ammonia, fluorine, chlorine etc.).

General plan – is the basic drawing of the layout of the object, usually done at a scale of 1:500, it is a drawing which shows the object in the projected borders. The drawing shows existing and projected plantations with the indication of the type of plantations (trees, shrubs, flower beds), open lawn spaces, water features, platforms, small forms, structures, etc. The width of roads, size of sites, buildings, contour lines are indicated on the plan. A scheme of functional zoning of the territory, cross–sections or profiles of typical sections at the scale 1:200-1:500, prospects, fragments of master plan of some part of the object can be added to the General plan.

Generative organs(reproductive organs) – the organs of sexual reproduction in plants (e.g. angiosperms include flowers, fruits (berries) and seeds.

Genetic analysis – 1. Determination of the nature of action and number of genes which determine the inheritance of analyzing traits. The main method of genetic analysis is hybrid analysis based on crosses and quantity evaluation of created forms in the progeny of these crosses. The hybrid analysis includes the population method based on the use of mathematics and variational statistics, as well as **an uploid** and mutation methods. An important step in the study of mutagenic effect of radiation and chemical substances is a cytological analysis of the frequency and spectrum of chromosomal aberrations. 2. Molecular genetic analysis of the structure of a particular gene (nucleotide sequence); analysis for coupling multiple factors is performed by using the analytical crossing.

Genetic biodiversity – includes the variety associated with species of domestic plants and animals which are used on farms, as well as with genetic stocks that are kept in gene banks.

Genetic diversity (changeability of agricultural crops) – is a necessary condition for the adaptation of these crops. Natural and economic selection have contributed to the emergence and elimination of many thousands of varieties.

Genetic diversity (variability of types of agricultural crops) is a necessary condition for the adaptation of these crops. Natural and artificial selection has led to the emergence and breeding of many thousands of varieties.

Genetic monitoring – observing the dynamics of the genetic structure of populations, including the control of the pace of the mutation process. It can be performed on the basis of a greater or less number of hereditary symptoms (including diseases, defects, anomalities etc.) throughout the population, especially in its breeding part. The search is aimed at the registration of certain groups of hereditary anomalies, which make it possible to estimate hereditary variability as a whole.

Genetic resources – inherited genetic information that is inherent in living organisms. Practically it is a set of species that inhabit the Earth.

Genetic soil horizon – genetically related horizontal layers of soil that are qualitatively different from rocks, and are the product of its modification by soil forming processes and have certain functional properties. Genetic horizons are designated by capital or small letters of Latin-Ukrainian alphabet.

Genetic type of soil –a group of specific soils that are formed under the influence of certain soil-forming factors and have peculiar common features. Soils of the same type can have different severity of soil-forming processes, various granulometric composition of rocks and humus content. They are characterized by defined morphological and physico-chemical characteristics, the most unique to this soil type. The main soil types are: sod-podzolic, gray (forest), black soil, chestnut, salt, malt, salt marshes, bog soils and peat, turf and meadow, brown mountain forest (brownsoils), brown, red soils, floodplain-alluvial, reclaimed and bulk.

Genre – historically stable form of compositional organization of literary works (a novel, a story, etc.). In landscape art genre includes Palace, monastery, castle, country and other types of gardens and parks.

Geobotany – a section of botany, exploring the vegetation cover of the Earth and its structural elements – the phytocoenoses, including their transformation under the influence of anthropogenic factors and related to it measures for the conservation of nature.

Geochemical landscape – according to B.B. Polinov, it is the totality of elementary landscapes from eluvial to super–aquatic, that are situated within the limits of lithologic homogeneous territory, genetically bound by the sources of soluble and self-weighted substances. It is a key concept for the analysis of horizontal distribution of anthropogenic influences, particularly contamination, possibilities of accumulation of contaminents (formation of technogenic geochemical anomalies) and self-cleaning of landscape.

Geodesy – the science that studies the shape and size of the Earth and develops methods for creating horizontal and vertical coordinate basis for the image of the physical surface of the Earth on a plane. Geodesy measurements are an integral part of the survey and pre–project work in landscape design.

Geographic factors – are abiotic factors that are based on the geographical location of the terrain and the history of its formation (climate, relief etc.).

Geographic information system (geographic information system – GIS); hardware and software, man–machine system that provides collection, processing, display and dissemination of spatial data, integration of data and knowledge about the territory for their effective use in solving problems with the inventory, analysis, modelling, programming and management of the environment and territorial organization of society.

Geographic isolation – the isolation of habitat of local populations, which prevents the free crossing and can lead to the formation of new species or the loss of population.

Geographic landscape – a natural or anthropogenic territorial or aquatorial complex, which is a genetically homogeneous part of the landscape with a single geological foundation, a similar relief, a hydroclimatic regime, a combination of soils and biocoenoses, and characteristic for it morphological structure.

Geophysics of landscape – a branch of landscaping which studies the processes occurring in natural–territorial complexes with the help of physical methods. The processes of exchange and transfer of matters and energy in the geographical envelope between the components and the landscapes in their interactions, relationships between the physical features of landscapes, their optical and radiophysical properties are studied. It is one of the foundations of programs and methods of stationary geographical research. Geophysics is closely linked with physics, meteorology, hydrology and other sciences. As a branch of science it emerged in the 60-ies of the XX –th century with the beginning of space exploration.

Geoplastics – one of the methods of plastic processing of the terrain, by articifial creating its forms, taking into account the aesthetic and functional requirements of the object. This technique has long existed in the landscape art of different countries (artificial terraces, hills, trees, amphitheatres, dams). According to the principles of geoplastics the burial mound with a viewing platform in the Park "High castle" was created (Lviv) in 1869.

Glade – an open space in the park, forest park, in the forest free of trees and shrubs that have vegetation cover in the form of a lawn; glades are divided into small (0.25 hectares), medium (up to 1 ha) and large (over 2 hectares); the width is respectively 1.5-2, 2-4, 4-6 heights of surrounding woody vegetation on the edge of the forest; for better insolation a longitudinal axis of lawn is placed in the direction of N-S.

Global monitoring – is the observation of planetary processes and phenomena in the biosphere, including the consequences of anthropogenic impact on nature. It is implemented with the aim of solving global environmental problems, development of mechanisms for managing regional natural processes and the biosphere in general. Global monitoring performs observation, assessment of the state and forecast of possible changes in natural processes, control over the energy and thermal balance of the Earth, levels of radiation, carbon dioxide, and oxygen in the troposphere and partially in the hydrosphere, levels of atmospheric pollution, state of the world ocean, gas circulation, climatic changes, migrations of animals and other natural phenomena. It is organically supplemented and associated with other types of monitoring.

Gothics – art and architectural style in the history of West European art, that appeared in France in the XII–XIII-th centuries. The Gothic style is characterized by pointed arches and vaults, excessive stone carving, sculptural decorations, stained–glass windows, the dominance of thin vertical architectural forms.

Graft – 1) a graft or a bud of a cultivated variety, grafted to another plant (rootstock); 2) a cultural (aboveground) part of a plant that has developed from grafted cuttings or buds. The inoculum is a carrier of varietal signs of the plant species, which is multiplied by a graft.

Grafting – the process of transplantation of a part (cuttings or buds) of one plant (inoculum) to another (substrate). There are the main types of grafting: copulative, grafting in split, inoculation**,** ablactation, and others. Plant grafting is best when the chosen plants have the closest botanical affinity to each other, and when the cambium is completely or partially tied to the cambium of a rootstock.

Granular pesticide– a preparation form of the pesticide with the size of the particles established by normative technical documentation; it has a loose granular form, which contains the active substance and filler. By the size the granules are divided into microgranules (0,15-1 mm); granules (1-2 mm); macrogranules (2.5 mm).

Granular-metric soil composition – the content of elementary particles of different sizes in the soil, which are combined into the fraction of granulometric elements (expressed as a percentage of the mass of dry soil).

Granulometric composition of the soil – one of the main diagnostic indicators. It determines the content percentage of the number of different by diameter particles of sand: – 1-0,05 mm, of dust – 0,05-0,001 mm, of silt – less than 0.001 mm. The composition of the soil depends on the breed on which it is formed and soil formation processes. There are the following types of soils-sandy, loamy, sandy-loam, clay.

Grass stands – is a set of herb plants shoots on natural meadows and lawns, formed by a mixture of various by types of bushing plant species.

Gray forest soil – soil that is formed in the conditions of unwashed regime under the deciduous forests in the continental part of the area of these forests and forest–steppe.

Green area near a house - an open space, located along the facades of residential buildings and is limited, as a rule, by passages and sidewalks. These areas are decorated with lawns with plantations of small picturesque groups of low shrubs and flower beds. Plots, so–called "pockets", which are located at the entrance of residential buildings, decorated with hedges of a height of about 0.5 m. are also recommended. Plantations of individual trees (linden, birch, mountain ash, etc.) at a distance of at least 5 m from the wall of the building are also possible.

Green plantations – are an important part of the urbanized area, combined into a single system with the purpose of improveming the environment, to ensure the organization of mass rest of the population, the improvement of the artistic image of the city. Plantations are classed by territorial (in town and country) and functional (general, of limited use and special purposes) characteristics.

Green planting of dumps – a complex of engineering, agricultural, forestry and other measures for the formation of vegetation on dumps and their slopes through the creation of reclamation forest crops, anti–erosion and other wood-shrub plantations, etc. It has a significant environmental and economic value, as an environment-generating factor for the protection and restoration of fertility of disturbed lands as a result of human production activity.

Green planting of populated areas – 1) a complex of works aimed at the creation and use of green plantations in settlements, or a system of green plantations of settlements; in urban planning, green planting is an integral part of the general complex of measures for settlements planning, building and improvement, based on scientifically grounded principles and norms, according to which the uniform arrangement among the development of gardens, parks and other large green massifs connected with boulevards, embankments, landscaped streams, that with suburban forests and reservoirs constitute a unified continuous system; 2) the discipline

"Planting of inhabited places" – studies the system of greening, which includes green plantations in residential areas (in gardens residential areas and microdistricts, at school, in children's institutions, hospitals), parks of culture and recreation, children's sports and other specialized parks, in squares and boulevards, on industrial, communal-warehousing territories, on bands of transport communications, as well as reserves, sanitary–protective and water–protection lands. The subject of studying the discipline is the science of the creation on the basis of landscape architecture of garden and park objects and individual elements of landscaping – arrays, groves, groups, alleys, green walls and borders, lawns, flower beds, rocky slides, gardens on roofs etc., the creation of which requires profound knowledge not only in the principles of landscape gardening, but also bioecological and decorative features of plant material – trees, shrubs, lianas, herbs, flowers, agricultural techniques for their cultivation and protection against diseases and pests.

Green planting of the interiors – a branch of horticulture, which deals with interior decoration – lobbies, living rooms, workrooms by creating winter gardens. For green planting, as a rule, indoor plants of subtropical and tropical origin are used, which by its nature remain evergreen all the year round.

Green theatre – a park building designed for performances in the open air; arranged on the slopes of the natural terrain, near water reservoirs, fenced with "green walls" that represent a frame with climbing plants or hedges of trees and shrubs. It was spread during the Renaissance.

Green walls – a kind of hedge, which reaches the height of over 2 m; it is settled mainly of woody plants (thuja occidentalis, common hornbeam, small–leaved lime, wych-elm, Norway spruce).They were popular in the Baroque era.

Greenhouse parterre – a parterre with an exposition of plants, which were exposed near the greenhouse in barrels or pots in summer. The background is lined and carefully smoothly aligned sand.

Greenhouses – buildings for growing seedlings and plants demanding warmth; in the greenhouses prepared mixtures are laid. The greenhouses are covered with glass or polyethylene frames.

Gross chemical soil composition – is the content of S, Al, Fe, Mn, Ca, Mg, K, Na, P, S and trace elements (or their oxides) as a percentage of the dry soil weight. For its determination it is necessary to take into account losses during frying, the content of carbonic acid, humus, gypsum, water soluble salts.

Grotto – an artificial park structure for staying in the shadow, modelled similar to the natural grotto (buried) in the rocks or accumulations of natural stone, the element of romanticism in landscape art.

Groundwater protection – in accordance with the Water Code of Ukraine, enterprises, institutions and organizations whose activities can adversely affect the state of groundwater, and particularly those exploiting accumulators of industrial, household and agricultural waste water, should take measures to prevent groundwater pollution.

Group – the main element of the composition of the object, which is of utmost importance in the construction of the landscape; it is the combination of woody plants of one or more species, isolated in the open space of the park. By the size they are divided into small, medium and large; by the dendrological composition – into pure and mixed; by the structure – into dense (thick), cut-outs and groups with openings.

Grouping – according to R. Whittaker, a system of interacting, differentiated in ecological niches, often competing with each other species. Species that are a part of it evolved in the direction of differentiation of environmental niches. The term is often used as a synonym to biocoenosis. There are groups of plants (phytocoenosis), animals (zoocoenosis), microorganisms (bacteriocoenosis).

Groves – are lands of forests that remain as remnants of agricultural landscapes near the cities and villages, which usually occupy small areas, from 0.25 to 0.5 ha, where in mature age, 50–100 trees grow; as a rule, consisting of one species by the composition of the plantations – oaks, birches, lindens, maples, ashes, pines, spruces and firs; very spectacular on the background of spruce and fir groves are groups of birches, weeping willows, ash, maples (especially before leaves falling).

Growing season – the number of days between the average date of the last killing frost in spring and the first killing frost in autumn. Vegetables and certain plants require a minimum number of days to reach maturity, so be sure your growing season is long enough.

Growth bud– a growth bud with a small piece of bark and a thin layer of wood under it, it is intended for budding; grapes and roses growth bud is wintering growth bud.

Gummose – the selection of gum or thick, sticky yellow fluid matter produced in the cells of the bark and wood of many species of seedy fruits, citrus trees, mulberry, cotton, sesame and other plants. The reason of gummose is unfavourable plant environment, injury, damage by insects and pathogenic microorganisms, etc.

Guttation – the allocation of water through the leaves in the drip-liquid state due to high root pressure. Guttation occurs through hydatode (e.g. strawberries etc.).

Gymnasium – the state educational institution in Ancient Greece where young people from wealthy families at the age of 16-18 years came to study. While studying in gymnasia, they did gymnastics, and under the guidance of philosophers they also studied politics, philosophy and literature. The most famous was the Academy, where conversations with pupils Plato and Likey led. It was founded by Aristotle.

Gypsing of soils – agronomic technique which consists in introducing into the soil gypsum for the destruction of harmful alkalinity and improvement of physical, physic-chemical and biological properties of soils containing absorbed sodium. Absorbed sodium in these soils is replaced by absorbed calcium and harmful sodium transformed into the water–soluble salt Na_2SO_4, which can be easily washed out of the soil.

H

Habitus – the appearance, a form of woody plants; it plays a primary role in a dendrological design and layout of plant communities, the formation of separate landscapes.

Half-hardy annual – a plant that completes its entire life cycle (growth, reproduction, death) in one season. It can be grown outdoors but requires winter protection from frosts and temperatures below 0° C.

Half-hardy biennial – a plant that completes its entire life cycle during two years, growing during the first year and reproducing and dying during the second. It can be grown outdoors but requires winter protection from frosts and temperatures below 0° C.

Half-hardy perennial – a plant that lives for more than two years. It can be grown outdoors but requires winter protection from frosts and temperatures below 0° C.

Half-hardy tree/shrub – woody plant, usually having a permanent framework of branches. It can be grown outdoors but requires winter protection from frosts and temperatures below 0° C.

Halophytes – plants, adapted to existence in saline soils, generally occur in the steppe and desert zones (with the exception of some coastal plants). They have special physiological adaptations for life on saline soils. Plants can raise the osmotic pressure of cell sap to "tighten" the water from the solution with high concentration of salts (wormwood) or to reduce the water consumption due to succulency (that is, the accumulation of moisture in succulent leaves and stems, such as Salicornia), to allocate the excess of salt on the surface of leaves through special glandules **(**limonia**).** Some types are used as indicators of salinization of soils, which can be caused by irrigation of black soil in the steppe zone or the regular use of salt to accelerate melting of snow on the roads.

Hamephytes – are a vital form of plants with vegetative shoots that do not die in the unfavourable (winter) period, since they are located near the surface of the soil or climb above it to 30 cm and in winter are usually covered with snow, so that they preserve the buds of renewal. Hamephytes include shrubs and semi-shrubs (e.g. cranberries). The term was introduced by Danish botanist K. Raunkier (1905). Hamephytes are active – the vital form of plants in which vegetative shoots do not change and under unfavourable conditions do not deepen, but usually lie on the surface of the soil. Predominantly, these are covering forms of the temperate zone of the northern hemisphere: Vinca minor, Thymus serpyllum, Arctostaphylos uva-ursi, Veronica officinalis . Hamephytes are passive – plants whose vegetative shoots geotropically remain unchanged at the beginning of an unfavourable period. They are weak, do not stand straight, fall and lie on the ground.

Harmony – in the art of landscape it is gardening dimension or proportion of individual elements of composition, specific unity in diversity, for example, the harmony of proportion, colour etc.

Heat balance– the aggregate of processes of income and heat outflow. There are heat balance of soil surface or a certain layer over a certain period of time, heat balance of the atmosphere, of the Earth. In the thermal balance of the Earth its violation takes place as a result of unbalanced world production.

Heat capacity of the soil – is the amount of heat in calories, which is necessary for heating 1 g or 1 cm^3 of soil at the temperature of 1° C.

Heat soil regime – a set of phenomena and processes associated with the flow, transfer, accumulation and heat transfer of soil.

Hedges – an ordinary planting of shrubs (and sometimes trees) to perform a decorative, hygienic, camouflage and fence functions. It is arranged in the form of one–, two – and three-row plantations of different heights, forming tiers. It is created by coniferous and deciduous plants that tolerate formative pruning (e.g. American arborvitae, Laurel, hornbeam, etc.). The height of hedges is classified into : high (over 2 m), medium (1-2 m), low (1 m), and borders (up to 0, 5 m).

Hemotrophes – organisms that synthesize organic matter from inorganic compounds due to the energy of oxidation of ammonia, hydrogen sulfide and other substances contained in water, soil and subsoils.

Herbaceous plant – a non-woody perennial plant, often dying in winter and becoming dormant by means of underground rootstocks or a woody base. The growth resumes in the spring.

Herbarium – a medicinal garden – a small garden, where the following herbs were grown : mint, sage, lily of the valley, rosemary**,** thyme, wormwood and other plants. The plants were planted and sown on a separate square plots. The garden had a regular layout and was enclosed. Near the garden a house of a doctor who was involved in the work in the garden was built. Herbarium was a prototype of the modern botanical gardens.

Herbicides – chemicals controlling weeds and other undesirable vegetation in ornamental plantations: in flowerbeds, while creating lawns, nurseries and etc. By the nature of the action on weeds and cultivated plants, all herbicides are divided into two groups: herbicides of continuous action, destroying all plants, and selective herbicides or herbicides of selective action, that destroy only certain groups of plants. Selectivity is manifested in the fact that the herbicide, applied in a relatively low dose, destroys weeds, but doesn't negatively affect cultivated plants; destroys dicotyledon plants, but has no effect on monocotyledon ones (cereals). However, such division is conditional, because these herbicides at high doses become non–selective, destroying all or nearly all plants.

Herm – four–sided pillar or the foundation, which ended with the sculpture of a head or bust. Firstly, in Ancient Greece it was the image of the God Hermes, then the other gods, but later it became a typical park sculpture.

Hierarchy of ecosystems – a functional subordination of ecosystems at various levels of organization in a series: 1 – biogeocoenosis; 2 – biogeocoenosis complex; 3 – landscape; 4 – biome; 5 –natural belt; 6 – biogeographic region: mainland unit, ocean; 7 – biosphere layer: aerobiosphere, terrabiosphere, litobiosphere, hydrobiosphere; 8 – biosphere as a whole. Each level of hierarchy of ecosystems is formed by certain system creating factor and has relatively independent nutrient cycle.

Higher plants – agricultural crops and their wild relatives; plants that grow on pastures and semi–natural pastures; trees grown in the countryside; weeds. Biodiversity in agroecosystems, as in any ecosystem, consists of such genesis fractions of biota: aboriginal (autochthonous), adventitious (alochtonic) and newest, that is a result of their mutual penetration. In addition to these three, the biota of agroecosystems contains a cultigenic fraction that is introduced by a man and cannot exist without human support.

Hilly garden – a garden type (in the Japanese language it sounds "tsukiama sansun"), which literally means "bump and water"; a garden is an artificial mound (sometimes quite high), which is completed by a pond and a stream flowing down the slope, finding its way among the stones.

Hippodrome – a specially prepared and equipped place for testing horses and equestrian sport competitions. Hippodromes are known from the first Millennium B.C., particularly in Greece and Rome. The ancient hippodromes had the shape of a long rectangle with one rounded end and the wall in the middle, which the chariots rode during the race. Over a track stands for spectators were built. In Ukraine big hippodromes have been built in Kharkiv, Lviv, Odesa and Kyiv.

Historical Park – an area, the principal aim of which is to acquaint the visitors with the historical monuments of landscape architecture. Preserved and restored historic buildings are used for museums, exhibitions, etc.

Historical–architectural zoning – zoning of monuments of landscape art and identification of elements of historical planning with the aim of recreating the original image and developing measures for the reconstruction of the object.

Hole near the trunk– the upper horizon of the landing pit, surrounded by the perimeter with the earth plate; it is created for each instance or is common for a group.

Homeostasis – the state of dynamic equilibrium and resilience of ecosystem, grouping, population and other natural systems; it is supported by regular renewal of its basic structures, matter–and–energy composition, characterized by ongoing functional self-regulation in all its parts.

Horizon humus – the most fertile part of the soil profile, where humus is accumulated.

Horizontal grouping – an ecological open system, defined by the relations of competition, independence, community, amensality between organisms of different species, ensuring their stable coexistence in a certain spatial and temporary interval.

Horizontal lines – lines on the plans and maps connecting the points of the earth's surface at the same altitude. With the help of horizontal lines the relief of the earth surface on topographic materials is depicted.

Horizontal shoot (horizontal stem) – the stem of plants, which has a relatively weak development of mechanical tissue and therefore cannot grow vertically, but spreads over the soil. For example, watermelon or a cucumber stems.

Hotbed (greenhouse) – a room for cultivation with natural heating (solar or biological) or with artificial heating, intended for a year–round plant cultivation. In ornamental horticulture, greenhouses are used to grow seedlings of annuals, biennials and perennials, for winter and early spring flowering, for the cultivation of indoor houseplants, for growing house plants in containers etc.

Human environment – abiotic and biotic environment, directly or indirectly, consciously or unconsciously altered by humans. The basis for the formation of such environment is the action of anthropogenic factors, which in contrast to the natural–anthropogenic environment dominate.

Humus – soil organic matter, detritus of ecosystem. It is the basis of soil fertility. The amount of humus in the soil is supported by two oppositely directed microbiological processes: by humification (anaerobic process of transformation of residues of animals and plants) and mineralization (aerobic process of destruction of humus into simple organic and inorganic compounds). In soils of natural ecosystems these processes are in balance**.** Different soil types vary in its content in the top layer called humus horizon, and in capacity of this layer. The richest are chornozems, the humus content of which can reach 10% (in the past in some areas of Ukraine, it reached 16%), and capacity of humus layer is 1 m. The poorest in humus are podzolic and chestnut soils. The capacity of humus layer is from 5 to 15 cm, and the contents is 1-2%. A transitional position between podzolic soils and chornozems the gray forest soils (they are divided into light gray, gray and dark gray), occupy and between black soils and chestnut – dark chestnut. Very rich in humus soils of moist habitats are meadow and wet meadow soils. Forest plantations contribute to the conservation of humus and accelerate its regeneration due to the acceleration of microbiological processes.

Humus horizons (N) – a relatively uniform soil layer which is separated in the process of soil formation located more or less parallel to its surface and is closely associated with the mineral part of the soil. Humus horizones are gray, dark gray, brown. They are mostly loose and well structured. There are genetic soil horizons– genetically related horizontal layers, which differ qualitatively from rocks and are a product of modification by soil forming processes and have certain functional properties.

Hybrid – the offspring of two plants of different species or varieties of plants. Hybrids are created when the pollen from one kind of plant is used to pollinate an entirely different variety, resulting in a new plant altogether.

Hydrologic regions – a division of the territory for effective use of means of protection of water bodies from depletion, silting, pollution by products of water erosion of soils by water–insoluble and water–soluble nutrients .

Hydrological regime – a set of naturally occurring changes in the state of the water object, peculiar for it and one that distinguishes it from other water objects. It is caused by climatic features of the basin and is manifested in the form of perennial, seasonal and daily fluctuations in the level and flow of water (water regime), ice phenomena, water temperature, quantity and composition of solid and ion flow, etc. It substantially changes under the influence of human economic activity. Forest reclamation helps to restore the natural laws of its functioning on the territories of their significant distribution.

Hydrological zoning – the division of the earth's surface into hydrologically homogeneous territorial units. The basis is certain hydrological features (floods, average long–term runoff, number of water objects, etc.) or the relationship between elements of water balance: precipitation = runoff + evaporation. It is expedient to use hydrological zoning in the development of hydrotechnical measures in agrarian landscapes.

Hydromorphic landscapes – landscapes of rivers, lakes, ponds, coastal seas, etc. Most of them perform decorative and recreational functions in urban environments, and only some of them are of economic importance.

Hydrophytes – higher aquatic plants that are attached to the soil and submerged in water by the lower part. They are used to secure the coast from breaking waves. For example, reed, cane, cattail, etc. because they grow in shallow water in the coastal area. For the first time, it was scientifically substantiated and effectively used as a means of protecting the shores of water bodies by Yu. Byallovich, O. Orikhovsky (URIFFM).

Hydroponics – a method of growing plants without soil, on nutrient aquatic environment. For the first time this method was proposed by K.A. Tymiryazyev in 1896, but then it wasn’t popular. The advantages of this method of plants cultivation is the absence of need in plants regular watering and fertilizing, as the nutrient solution is replaced once per month. Plants grown by this method are more decorative, with bright colours of flowers, a longer flowering period.

Hydrothermal soil regime – is a set of all phenomena of entering, expenses and transfer of heat and moisture of the soil.

1

Identity – is determined by the similarity of comparable features. In the rhythmic series, accents and intervals are identical, in the symmetrical composition are the volumes that balance each other.

Idyll – a special kind of landscape harmony , which embodies the grandeur of nature and human labour that transforms it; for objects of landscape gardening art of the XVIII-th century typical idylled country scenes are typical**,** hiding social contradictions in them.

Ikebana – the original ancient art of floral arrangement in Japan. Ikebana originated in China in the VII th century. It was invented by the priest–Buddhist. At first it was used as an offering to the gods and was created only by the monks. Then the Ikebana was adopted by the Japanese, who remade it in their own way, having developed as an art. Today Japanese and Chinese flower arrangements are significantly different from each other. The essence of ikebana is in creating compositions of flowers and branches, which would be in harmony, reflecting the relationship between the earth, heaven and man. The basis of ikebana is the triangle;

the highest branches symbolize the sky, shorter ones (2/3 of the length of first ones) – a person, the shortest-branches (1/3 of the length of the first two) – the land. Ikebana expresses the relationship between these three elements. The three-sided order creates in people the desire for perfection. Committed relationships between heaven, earth and man is the peace around the world, where nobody struggles with each other.

Impact of forest – environment forming impact of forest ecosystems, it is ensured by their protective properties (protection of the soil from excessive sunlight, wind, creating the necessary conditions for life of various species of plants, animals, conservation of humidity and concentration of carbon), and regulatory (absorption, accumulation of water, oxygen, and other substances) and productive (wood, fruits, medicinal plants, the accumulation of energy in phytomass and zoomass) qualities.

Impact on the environment – changes in the environment that wholly or partially are the result of activity of the enterprise/organisation, production or services. This definition of impact on the environment, according to ISO 14000 standards, is different from the usual. According to it the effect can be represented by, for example, harmful discharges and emissions that are released into the environment as a result of industrial activities. But in the system 150 14000 it is stressed on the change in the environment that a company needs to reduce or prevent by controlling the environmental aspects of its activities.

Incompletely developed soil – a soil whose profile hasn't a complete set of genetic horizons peculiar for the soils of this zone or given conditions of habitat.

Index of humidity – the quantitative characteristics of the climate humidity (I), that is calculated according to the formula: $I=(100s-60d) / n$, where s is the sum of the monthly differences between precipitation and total evaporation for those months when the normal precipitation exceeds the total evaporation; d – the lack of moisture and n is the sum of the monthly values of total evaporation.

Index of pollution– qualitative and quantitative indicators of pollutant (substance, radiation and etc.). Polysemantic term that encompasses the concepts of quantity (volume) of substance–pollutant in the environment and the level of its impact on living organisms.

Index of the leaf surface (leaf index) – the indicator of photosynthetic biomass, that is equal to the area of illuminated leaves per unit of soil surface. The maximum net production corresponds to the leaf index, which is about 4 (i.e., when the area of illuminated leaves is 4 times larger than the area occupied by plants), whereas the maximum gross output is achieved when the leaf index is exactly 8-10 (this level is typical for forests).

Indicator – a physical phenomenon, chemical substance or organism, by which the presence, quantity or change of status indicate character or change of properties of the natural environment. A plant body with narrow ecological limits of adaptation (there is in one system and there is not present in other), whose presence in forest stand allows to determine the forest type, to generalize the understanding of the processes occurring in forest environments or in forest meliorative fund.

Indicator plants (plants-indicators) – plants adapted to certain conditions of habitat and used as identifiers of these conditions. The object of indication can be soils, which are determined by the composition of vegetation, some rocks, heavy metals and some chemical elements (for example, some violets are indicators of high content of zinc, the presence of wild radish indicates the acid reaction of the soil solution).

Indicators of trophy – plant species that are typical only for certain trophotops, they are one of the leading characteristics in determining the type of forest growth conditions.

Industrial desert – areas with a disturbed environment and as a result of human industrial activities (waste heaps, quarries, dumps etc.), with the presence of limiting factors (extreme poverty in nutrients and substances, toxicity of the substrate etc.). Industrial desert is subject to reclamation.

Industrial landscape – a kind of anthropogenic landscape, which is a result of the environmental impact of large industrial complexes; it is characterized by the considerable –concentration of population, industrial enterprises, intensive influence of anthropogenic factors

Inhibitors of plant growth – substances that slow the growth processes of plants. There are natural and synthetic ones. Growth inhibitors influence directly the intensity of growth, causing the dormant buds, seeds, affecting the respiration of plants, energy, nucleus and protein metabolism, enhancing or reducing the activity of phytohormone.

Insecticides – chemicals (poisons) for killing insect pests of ornamental plants, parasites and those carrying infectious diseases. By the nature of action on the insects, the insecticides are divided into contact (external), intestinal (internal), respiratory (tracheal, or fumigants) and systemic.

Insolation – solar radiation coming on the earth surface, the intensity of which is measured by the amount of energy of direct solar radiation that falls during 1 min per 1 cm2 of a surface that is perpendicular to the sun rays. Insolation depends on the height of the sun above the horizon, the position of the surface on which the rays fall, the height above sea level, the cloudiness and atmospheric transparency. Insolation is an important source of heat on Earth and the main cause of thermal phenomena observed in the atmosphere, hydrosphere and on the earth's surface, biophysical and biochemical processes in plants and animals.

Integrated green area of the city – a scientifically based set of territories within settlements and out of town in green zones, which includes green spaces, water areas and other elements of the natural landscape, that are a peculiar environmental frame of the town planning structure and provides recreational, sanitary–hygienic, aesthetic and social functions with the goal of creating a healthy environment for work, sport and recreation. The structure integrated green area of the city should be considered separately in three scales, which correspond to three distinct structural levels. There are macrostructure, microstructure and mesostructure.

Intensity of litter decomposition – the conversion rate of organic litter of trees and shrubs in inorganic substances. It is an important indicator for forest plantations, which largely determines their absorption capacity; the division of forest species according to the degree of decrease in the intensity of decomposition of the assimilation system: common ash, small–leaved elm, small–leaved lime, birch, hornbeam, Norway maple, European larch, common oak, beech etc.

Interaction of ecosystems – mutual influence of ecosystems through abiotic and biotic connections. Interaction of ecosystems is determined by their geomorphological position in the landscape, conditions and migration of chemical elements characteristics of biotic components.

Intrazonation – the distribution of any natural formations (swamps, river sediments, coastal dunes, landscapes, etc.) in the form of inclusions within one or several landscape areas. The examples of intrazonation: bogs in taiga, the marshes in deserts and prairies, floodplain forests in these zones, the vegetation of river sediments.

Introduction – natural, random (e.g. as a result of immigration) or purposeful (done by a person for the purpose of acclimatization and resettlement) introduction of species into the flora of any locality, which previously had not been there; it can result in different consequences – occurrence in the composition of local biocoenoses, and rapid reproduction of naturalization or extinction.

Invariants of the landscape – a set of qualities that are peculiar for the landscape and remain unchangeable in the process of transformation under the action of external influences. On the basis of invariant qualities it is possible to build a hierarchical genetic classifications of landscapes.

Inventory of green plantations – the complex of technical measures, which is carried out with the aim of obtaining reliable data on quantitative and qualitative characteristics of green plantations on the settlement territory; promotion of the creation and formation of decorative and environmentally friendly and resistant to adverse environmental conditions of the plantations; the use of inventory data while developing programmes of green landscaping in human settlements; renewal, reconstruction and operation of objects of green farming and undertaking, preventive, and therapeutic measures; organization of unexausted use of green areas; establishing the correspondence of green plantations to the building and healthy standards.

Irreversible environment changes – 1) changes of the environment or any of its components that can't take normal form and have an initial biological significance without human intervention or prolonged natural process (e.g. Introduced chemicals can alter the normal structure and functions of the environment); 2) changes in environment components that cannot be compensated in the course of natural processes (e.g. evolutionary changes).

Irrigation water tube – is a special water supply system, which is arranged when a source of household water supply is limited, for supplying the system of fountains, irrigation of plantations etc., the source of which can be natural reservoirs, wells, artesian wells.

Island – is an earthy or stone engineering facility located on the reservoir and is used to revitalize the park landscape, to create diverse perspectives, solitary rest and reflection. They are characteristic for romantic parks.

J

Jardiniere – a bookcase, a rack for containers with flowers that are grown in the inner rooms, on balconies, terraces.

Japanese Garden – is a traditional work of Japanese art, characterized by accurate reproduction of nature in a small open space with a thorough elaboration of details, it can cause a visitor's state of contemplation; it can occupy an area of only a few square meters. To imitate the natural objects created in the garden, various materials are used: for example, a large stone symbolizes a mountain, small pebbles – a waterfall or mountain stream, white gravel – a sea, a bunch of sand – a hill, a stone tower – a temple etc. In this type of a garden the most common are asymmetrical compositions of stones and pebbles, mosses and low plants, groups of trees, which use various tree species, taking into account their periods of growth and flowering. In addition, in Japanese gardens large areas of free space occupied by lawns, sand or gravel are created.

K

Karst – territorial formations as a result of the process of dissolution in natural waters of limestone, gypsum, rock salt and other soluble materials, the shape of the relief, formed as a result of these processes. In temperate latitudes it manifests itself in the form of funnels, saucers that in further development flow together and form a depression.

L

Labyrinth – 1) intricate transitions of the Cretan palace in Ancient Greece; 2) a garden, known since ancient times, but has become especially popular in the Middle Ages. It was a rectangular or square garden area, which consisted of specially confusing garden paths, surrounded by a cobbled fence. The reception was borrowed from the builders of the temples, which created paths of a coloured stone in the form of a labyrinth. As a material, for example, living plants and shrubs as well as stones are used .If the gardens are small, then the labyrinths are not suitable for walking, but perform a purely decorative function. For example, in England there is a landscape garden in the valley. A large number of rhododendrons and camellias grow there.

Land and soil resources – resources of all agricultural lands or all soil cover, regardless of the form of their use.

Land cadastre – a collection of information about the natural, economic and legal situation of the lands necessary for organization of rational use and protection of land resources.

Land cover plants – a large group of climbing vines, low–growing herbaceous and shrubby plants with vegetative mobility, capable of active capture of new area and keeping it for themselves (ivy, horizontal juniper, etc.). They are characterized by rapid growth and bright blooms. They are used to create rock gardens, rockeries, mixborders, flower beds and portraits of plants and also for landscaping slopes, creating dense decorative groups and protecting the soil from erosion.

Land plots – lands, grouped and suitable for further use in specific economic purposes (or systematically used), which differ from others by natural and historical features.

Land protection – a system of legal, organizational, economic and other measures aimed at the rational use of land, preventing their unjustified exclusion from agricultural use, protection from harmful, human-induced impacts, as well as at the reproduction and increase of soil fertility, productivity of forest land, provision of the regime of lands for nature conservation, recreation, and historical and cultural purposes.

Land reclamation – is a complex of organizational and economic, as well as technical and biotechnological measures aimed at restoring the integrity and productivity of destroyed lands, and improving the environment.

Land resources – lands that are used or can be used (lands of the reserve) in various branches of the national economy.

Landscape – a natural geographic complex whose components (relief, climate, water, soils, vegetation and fauna) have a close relationship, forming a single inseparable system of natural or natural and anthropogenic components, as well as complexes of lower taxonomic rank (facies, tracts, terrain). The term was borrowed from the general literary language, where it relates, as a rule, to the visual impressions of the landscape, pictures of nature, terrain.

Landscape (landscape painting) – a part of the park's space, visually separated from the general park space, conditionally placed in the "frame", which limits the field of vision and has a certain compositional construction. Unlike paintings in landscape painting, a park landscape pattern is characterized by three–dimensional space and can be perceived from different points. The park picture often includes elements of other landscape areas in its composition and thus it is a mean of organizing the unity of the composition of the park. Landscapes are divided into simple, complex and panoramic.

Landscape (abiogenic) – a landscape formed without significant influence of living matter. They are conditionally (since the entire surface of the Earth is permeated to varying degrees by manifestations of life) include the landscapes of the central part of Antarctica, the Greenland Ice Shield, the highest peaks of the Himalayas, and others. They are opposed to biogenic landscapes that have been formed under the influence of living organisms.

Landscape analysis of territory – one of the pre–project stages of object inspection that includes the estimation of territory by functional, aesthetic and economic signs; planting, relief, display of slopes. Potential possibilities of enriching landscape, the construction of landscape pictures, the organization of routes of visitors movement, the possibility of increase of degree of comfort of environment are revealed.

Landscape approach – is based on the representation of space as a set of territorial units within which the components of the natural environment (geocomponents) adapt to each other during a long–term development, they are closely interconnected and represent a single whole. As a whole, they react to external influences, particularly to anthropogenic ones. Such territorial units in the classical landscape science are called natural territorial complexes, or geosystems. An important feature of landscape approach is a principle of the hierarchy of the landscape territorial structure.

Landscape architecture – the architecture of open spaces, a branch of urban planning whose purpose is to form a humanized environment for life and recreation of the population in towns, suburban areas, resorts and in rural areas, taking into account functional, technical, economic and aesthetic requirements. The specificity of landscape architecture is that it deals with natural materials and objects – relief, stone, water, vegetation in the design of parks, gardens, public gardens, boulevards, forest parks, territories of residential and industrial districts, country–side places of mass recreation. Landscape architecture emerged in the synthesis of landscape architecture and urban planning. On the other hand, it is a part of the architecture that deals with the organization of the surrounding landscape in order to adapt it to the practical and aesthetic needs of man with the help of components of the natural landscape – relief, soil, climate, and water surfaces.

Landscape art – one of the types of art that exists along with others (painting, sculpture, music), whose sphere of activity includes volumetric and spatial organization of various territories with the help of components of the natural landscape, architectural and engineering constructions. One of the most important tasks of landscape art is the formation of an aesthetically valuable environment of human existence, the creation of anthropogenic landscapes using natural and artificial components (trees, shrubs, herbaceous plants, relief, water, park structures, small architectural forms, including pavilions, bridges , fountains, pools, vases, sculptures etc.).

Landscape cutting – a complex system of cutting individual trees and shrubs or their aggregate in recreational forests; the formation of new and improvement of existing types of forest park buildings; the cultivation of valuable artistic and aesthetic as well as sanitary facilities; the creation of favourable conditions for people's rest. There are felling of trees for care of the composition, decoratation and spatial arrangement of trees.

Landscape degradation of plantations – a process of changing some types of landscapes by others in the result of natural vegetation development. It is enough for some time to stop park caring, as self-sowing of low–grade breeds leads to overgrowth of grass plots. Formed various types of landscapes in parks (regular, garden, meadow etc.) begin to disappear, turning into a forest type.

Landscape design – a method of designing which involves the development of measures for the volume-space organization of the territory, the formation of a system of plantations, the open spaces of meadows, the recreational areas, the routes of walking and transit traffic of visitors, as well as the location of small architectural forms, the equipment, the colourful solution.

Landscape estimation of the territory object – a method of pre–design studies, which is conducted taking into account the main components of the landscape – climate, geological conditions, relief, soil, vegetation, aesthetic features of the landscape etc.

Landscape geochemistry – the branch of landscaping research and geochemistry, studying the chemical composition, basic forms and patterns of migration (reallocation) of chemical elements in the landscape. Its main objective is the study of the properties of natural–territorial complexes and peculiarities of their functioning and development with the help of the analysis of elements migration. There are the following types of geochemistry: general, main, historical and applied landscapes. In Ukraine the fundamentals of the theory of the circulation of elements in natural and anthropogenic, particularly agricultural landscapes have been elaborated, the stationary landscaping geochemical investigations for rational land use are expanding. Data from these studies are used in the search of mineral resources, solving the problems of protecting environment, agriculture, medical geography, in the study of the influence of anthropogenic factors on the natural environment etc.

Landscape melioration – is a scientifically substantiated system of measures aimed at increasing the natural resource potential of anthropogenic landscapes and significantly improving the conditions for the implementation of their socio-economic and nature-protective functions; one of the types of rational nature management. According to their functional purpose, there are several types of it: water-regulating, land-clearing (land protective, relief management, soil reinforcing etc.), chemically regulating (fertilizing, disinfecting, cleaning), climatic (warming, cooling, airing, wind-breaking etc.), snow delaying (snow-accumulative, snow-clearing, snow-damaging etc.), recultivating (designing, correcting, preserving), bio–regulating (phytocultivation, phyto-correcting, the man-made green landscaping). As a result of the conduction of the reclamation works, created melio-geosystems (landscape-reclamation systems) are man-made. There are types of landscaping reclamation: water, land (lithotropic), plant (phytotropic), climatic and chemical.

Landscape modification (changing landscapes) – receiving by a landscape of new or the loss of former properties under the influence of self-development or external factors. Self-development of landscape occurs constantly and spontaneously, and the rapid and fundamental changes take place under the influence of external factors, primarily human activities.

Landscape park – artificially created, and more often a forest park that imitates or represents any landscape attractive to people.

Landscape protection – a system of technical, administrative, legal, economic, biotechnical, educational and other measures to preserve the resources of renewable, environment–forming and socio-economic functions of landscapes. It includes landscape planning, improvement, reclamation and optimization of landscapes, monitoring compliance with the use and care regime, preventing destruction, contamination of landscapes, introducing a protected regime in areas of especially valuable landscapes and other measures.

Landscape reconstruction – an architectural planning and economic measures aimed at the disclosure and enhancement of the aesthetic value of the landscape and adaptation of the area for mass recreation of the population. Landscape reconstruction of green plantations in forest park landscapes are landscape cuttings and landscape plantations.

Landscape regime – a set of rules, measures, norms for achieving one or another purpose. There are two types of landscape regime : the regime of natural processes and the regime of use.

Landscape science – is a branch of physical geography that studies the patterns of the construction, functioning and developing landscapes, including their changes under the influence of anthropogenic factors, the ways and methods for their protection, reconstruction or optimization .

Landscape section – a plot of territory, revealed during the landscape taxation, that is characterized by a certain view, predefined by the homogeneous type of vegetation, specific composition of arboreal and grass plants, the class of age and bonitet of plantation, their close order, tier, relief etc.

Landscape self-cleaning – the ability of a landscape to transform the landscape (to sort, to deposit, to decompose etc.) or remove the substances contaminating the landscape. It is one of the elements of their self-organization. The greatest ability to self-cleaning is characteristic for landscapes with high intensity of the circulation of substances and the advantage of scattering streams.

Landscape self-regulation – the property of the landscape during its operation to preserve at a certain level the typical state, regime, characteristics of the links between the components.

Landscape stability – is the stability of the parameters of the landscape for indefinitely long time. It is provided, as a rule, by the constancy of external conditions. Active reaction to the change of external conditions (anthropogenic impact) characterizes the stability of the landscape. Opposition is – the variability of the landscape.

Landscape style – a way of planning objects, started long before the new era in China and Japan, although the real prosperity it acquired in England in the XVII-XVIII-th centuries. It is characterized by the free arrangement of all components of the landscape with maximum use of relief, existing vegetation, water reservoirs, and with the definition of the natural character of artificially created environment. Sometimes it includes elements of regular planning.

Landscape taxation – a method of pre–project assessment of the forest area intended for recreation of people in forest parks, recreation areas. The aim of the landscape taxation is to identify, record and apply on the plan (geodetic basis) landscapes with a certain forestry vegetative and architectural and artistic characteristics, which enables to estimate the territory and its potential for recreation. In the landscape taxation of the forest park, in addition to purely taxonomic variables, the following indicators are included: a type of forest park landscape; recreational assessment; aesthetic evaluation; the class of planting stability; the assessment of the passage of the plot; the precision of the plot; the assessment of the stage of recreational degression.

Landscape–ecological approach – the study of natural systems is developed by the landscape ecology, it combines two basic scientific approaches: landscape (horizontal) and ecological (vertical).

Landscapes conservation – a withdrawal of landscapes from the use to preserve them in original or unaltered form. It is conducted by spreading on landscapes of reserve regime.

Lapidarium – is a place in a garden or park where natural stones are piled up, often with inscriptions, the fragments of sculptures, the elements of architecture that have a cultural or historical value.

Law of successive slowing – processes in mature balanced systems that are in stable condition, and as a rule show a trend to slowing. For example, the acclimatization of new species gives the effect at the initial phase, especially in favourable for the species conditions. But then the population explosion is fading, self–regulation at the ecosystem level takes place and its economic value significantly reduces. For example, any type of reclamation firstly favours the increase of production, which then decreases and stabilizes at a certain level.

Lawns – artificial turf covering, made up from cereal plant species on glades, meadows, and parterres, in the bands along the streets. They provide the basic background for sculptures, flower beds, tree groups, highlights the architecture of the buildings. They are divided into decorative, sport and ones of special purpose.

Lawn aeration – cultural practice in lawn care, during which the turf is cut vertically by sharpened rake or fork to a depth of 3 to 7 cm. Aeration should be done in early summer, after two-and three-time lawn mowing. It isn’t recommended to carry out deep puncture of turf in dry weather, because in these conditions, the soil is too dense and hard.

Lawn mower – a mechanical device for cutting grass on lawns. Modern lawn mowers are divided into electric and ones with petrol internal combustion engines. Each of these types has its own advantages and disadvantages (for example, electrical mowers are forbidden to mow wet grass). In general, the principle of their work is the same: the motor drives the metal knife, mounted under the body of the mower, which exactly, mows the grass at a given height. Most lawn mowers are equipped with special baskets for gathering grass.

Lawn mowing – is a cultural practice, which consists in cutting the stalks of lawn grasses at a certain height, which helps to intensify the cultivation of grasses, the formation of dense turf and a beautiful grass stands, resistant to the appearance of weeds and to trampling down. It is carried out with the help of lawn mowers of various designs. It is recommended to mow a young lawn at time when the plant shoots reach the height of 8-10 cm, leaving at least 5 cm. In the future, this measure should be carried out once every 10–14 days depending on the intensity of grass growth. The recommended cutting height is 4-5 cm .

Lawn parterre – the humblest and cheapest of the parterres, the basis of which was lawn with geometrically planned paths, which formed different patterns; in perimeter ridges flowers sometimes were used. Therefore, they were placed in less important areas.

Lawn scarification – is a cultural practice of lawn caring in which mosses, weeds and organic remains are removed. Due to it more air, moisture and nutrients are found in the soil and plants. It is conducted by ordinary and special rake in spring and autumn, if necessary combining with the aeration of the lawn.

Layer plowing –the layer tillage of soil with the movement of soil horizons. It is used for radical improvement of podzolic and saline soils. It is performed by long–term plows at a depth of at least 40 cm once every 5-6 years.

Leader – growth that appears from the apical bud of a tree or a branch and has the most active growth.

Leaf mosaic – a drawing of the location of the plants leaves, which predetermines the formation of light-and-dark effects, providing a pictoriality and originality of the appearance of the plant.

Least moisture content of the soil (field limit) -is the maximum possible content of suspended water after gravitational outflow of the entire moisture.

Life cycle – a set of growth and development phases, at the completion of which the organism reaches maturity and becomes able to give birth to the next generation.

Life form – a collection of species of plants or animals (systematically close and far) with a similar habitus, reflecting their historic adaptability to different environmental conditions. Externally the life form is characterized by common features of adaptation to the specificity of place of residence, the similarity of basic morphological traits and characteristic behaviour. The study of life form is of great importance for solving a number of theoretical and practical questions, particularly concerning the peculiarities of the environment influence, and directions of adaptive changes in organisms during introduction and acclimatization.

Light regime – the peculiarities of the distribution and change in the intensity of solar radiation entering the ecosystem. It is an important environmental factor.

Light soil regime – a complex of factors that determine the absorption, the use and reflection of rays of sunlight by a surface layer of soil. Light soil regime depends on the degree of humus, granulometric composition of the soil, the exposure of the slope.

Limiting belt – a strip of forests, located along the perimeter of the protected object (fields, nurseries, water reservoirs, communal buildings, etc.).

Liquid – a park massif with a small vertical openness of crowns, which has no undergrowth; the completeness of plantations at the same time is 0,3-0,4.

Litter – is a layer of fallen and semi–decomposed leaves, needles, branches and other vegetation residues that cover the soil surface in forests, parks and forest parks. The litter plays an important role in the activity of the plantation. It accumulates plant nutrients. Thanks to the litter, the unproductive evaporation of moisture from the surface of the soil and the surface runoff of rainwater are significantly reduced. Also dead leaves are the main food for earthworms that take part in soil formation.

Living substance – the totality of living organisms of the biosphere, which is numerically expressed by elementary chemical composition, mass and energy. The concept **Living substance** was introduced by V. I. Vernadsky. Through living organisms almost all nutrients in the biosphere pass several times, that’s why living substance changes the history of the chemical elements and acts as a deep geological factor.

Locality – is the largest morphological part of the landscape, a group of tracts that form some significant forms of relief (valleys, water bodies, mountain circuses, etc.) or landscape plots with different proportions of areas of similar tracts. Their typing is important in the economic development of territories. In the broad sense it is the territory with a peculiar combination of natural conditions, that distinguishes it among others.

Longevity of seeds – the duration of the period during which the seeds retain the ability to germinate. There are biological longevity of seeds – the deadline when the ability to germinate only some seeds of the given species preserve, and economic, when the conventional seed germination is saved in the part of them.

Longevity of woody plants – is determined by the duration of ontogenesis, biological characteristics of plants and environmental factors. When growing plants outside their habitat and natural areas, and with urbanization their longevity is often reduced. Plant damage by pests and diseases also negatively influences. Trees–long–livers are monuments of nature, often grow in parks and protected areas of our country: there are separate instances of oak aged more than 1000 years., beech – 500-600, linden – 700-800, Pinus silvestris – 400-600, spruce – 400-500 years.

Long-term rhythms – are biological rhythms with a period of more than 1 year. So, the periodicity of migration of some rodents at high latitudes is 4–5 years, the locust infestation is 30-40 years. Ten – or eleven years rhythm of solar activity determines the rhythm of some biological processes on the Earth (the outbreak of parasitic, virus and other diseases).

M

Macroclimate – the climate of the locality, region, country, continent; it is taken into account in dendrological zoning.

Macroelements – chemical elements contained in plant organisms from dozens to 0,1-0,001%. The so–called organogens (carbon, oxygen, hydrogen, nitrogen) and calcium, potassium, silicon, magnesium, phosphorus, sulfur, sodium, chlorine and iron belong to the macroelements.

Macrofactors are the main regulating and limiting environmental factors that can be accurately measured (temperature, precipitation, pressure etc.).

Macrorelief – large forms of the earth's surface, created mainly by endogenous (neotectonic) processes involving exogenous, with oscillations of heights from several hundred to thousands meters. It includes mountain ranges, plateau, large volcanic cones etc. Macrorelief is characterized by vertical landscape zone nature differentiation caused by changes in climatic conditions (the ratio of heat and moisture) with elevation up to a different height above the sea. Macrorelief is an abiotic component of the landscape, the regulator of the intensity of developing exogenous processes, it affects climatic and hydrological processes, the distribution and properties of flora and fauna, the conditions for its economic development and the use of natural resources, the quality of human living environment.

Macrostructure of the soil – fractions , lumps of soil the size of which is 0,25-10,0 mm. The most valuable are aggregates with a diameter of 1-10 mm.

Main tree breed – is a tree species, which, in its forest conditions, performs useful functions in the target forest plantations.

Malt (**saline soils**) – is a group of soils of various types that have morphological and physicochemical properties, caused by the presence of exchangeable aluminum and hydrogen in the colloidal complex, and have acid reaction of water solution. By the degree of severity of the soil process they are divided into weak, medium and strong salts.

Management of the landscape structure – is a system of measures for organizing the rational functioning of landscapes in the process of fulfilling their socio–economic functions. Its main features are: the pursuit of the goal; the analysis and prediction of positive and negative consequences of planned activities; the series of objective restrictions to ensure the principles of rationality; the hierarchy and interconnection of events. Measures must be timely and consistent; have signs of adaptability, adaptation in the application of certain decisions etc.

Marginality – is regional, boundary position of natural formations, the production of which is risky due to soil, climatic conditions. These places require significant conservation efforts, aimed at nature protection.

Massif – 1) a section of the park with an area of more than 0.5 hectares, which consists of wood and shrub plantations, in combination with meadows, playgrounds, track and path network. There are park massifs with plantations of single–breed composition of horizontal closeness (pine forest, spruce stands) and mixed plantations of vertical isolation with the presence of a subforest; the massif in the park has an area of 0.5 to 4-5 hectares, in the forest park – more than 10 hectares. 2) a flower garden of considerable size of regular or landscape form, in which the bright effect is provided by the simultaneous flowering of all plants. In the urban design and exhibition parks, the assortment consists mainly of annuals, in landscape parks – perennials and bulb plants.

Maximum molecular moisture content of the soil – according to A.F. Lyebyedyev) – the highest content of moisture in the soil, held by the forces of gravity on the surface of solid soil particles.

Meadow lawns – they are arranged on large areas of parks, forests and meadows. These lawns are created, as a rule, by improving existing grasslands of natural origin, cultivating also legume plants such as clover, alfalfa, etc. with them.

Meadow type of a garden–landscape – is characterized by a significant advantage of the grass–covered spaces above the area occupied by trees and shrubs (the closeness is about 0.1-0.2). Meadow landscapes are mostly formed on the banks of reservoirs. Usually on such meadows the following trees are grown: poplar, willow, black alder, ordinary oak, etc. Floodplain meadows have a peculiar composition of grass plants that demand fertility and soil moisture. There are also waterless valley meadows with a predominance of cereals, which are accompanied by representatives of other xerophilic families. Single trees and shrubs on these meadows are often typical plantations.

Meadow park – is a well–developed meadow whose vegetation is enriched with trees, shrubs and flowers, and is organized into the system of park compositions, which improves the recreational qualities of the meadow landscape.

Meadows – large gardens covered with grass; in suburban hydro– and meadow parks they form the main type of landscape. Meadows are projected on flat or slightly hilly lands with the area of more than 4 hectares.

Measuring plug – the inventory tool for measuring the thickness of tree trunks. It is made of wood, stainless steel alloys, plastic. The diameter of the tree trunk is measured at a height of 1.3 m. It is used in the inventory of parklands and in pre–studies.

Mechanical soil degradation – is diagnosed by a violation of the integrity of the soil cover. Very often, mechanical degradation is associated with water and wind–erosion processes, under the influence of which the depth of humus layer decreases, until the complete destruction of the soil and the violation of soil forming and underlying rocks (washed away and eroded soils, yields formation of rocks). There belong technogenic formations: industrial dumps, recultivated soils, as well as the permanent removal of topsoil together with crops (roots, tubers).

Medicinal plants – plants used in medicine and veterinary science as medical or preventive and sanitary means. Their properties are caused by the presence of a complex of biologically active substances (alkaloids, glycocides, phytoncides, vitamins, etc.) and ballast (those that are considered inactive) substances. Medicinal plants are used in natural and processed form in scientific and people’s medicine as an effective natural, biologically effective means for treating various diseases, as well as increasing the resistance of the organism to them. Medicinal raw materials are various organs and parts of plants: roots, rhizomes, bulbs, tubers, buds, leaves, grass (leaves with stems), flowers, inflorescences, fruits, seeds, cortex etc.

Megarelief – the largest forms of relief on continental protrusions and in oceanic depressions with significant amplitudes of heights (ths. m) and the area from dozens to hundreds of thousands (square). The megarelief of continents is represented by plains with different age platforms and mountain formations. In the oceanic depressions, it is a deep-water bed, mid-oceanic and bayonet ridges. It significantly affects the differentiation of natural conditions, it plays a significant role in the formation of landscapes, terrestrial and marine ecosystems.

Memorable stone – is a stone on which various events, phenomena, and names were depicted; they were installed on squares, crossroads, often on the site of stone real monuments to prominent figures were installed or in honour of commemorative events.

Memorable trees – are trees planted in memory of some historical events and trees associated with the activities of prominent people, for example: B. Khmelnitsky's oak, M. Shashkevich's linden. In honour of T.G. Shevchenko today throughout Ukraine over 20 oaks are grown . In the village of Budysche in the former estate of Mr. Engelhardt two oaks aging more than 500-years grow, which the poet loved to visit, being still a serf. On the border of Lviv and Ivano-Frankivsk regions near Bolekhov, Franz Josef's oak, whose age is more than 300 years old, grows.

Memorial complex – a park territory, where monumental architectural and artistic buildings are located – mausoleums, pantheons, sculptural groups, obelisks and monuments; it is mainly solved as a regular or landscape park with an expressive center, wide roads, playgrounds. In decoration the contrast forms of plants are used .

Memorial museum – is a complex of buildings, structures, household items and surroundings that are preserved in integrity or restored, which reproduce the real environment in which an outstanding person of the past lived and worked.

Memorial reserve – is a natural and artificial landscapes of memorial sites, gardens and parks, forests and groves, meadows, rivers, ponds, lakes, which have survived to our days, all that constitutes the natural surroundings of a memorial museum.

Mesohemerobic (medium–cultivated) biogeocoenoses – ecosystems with intensive farming (forest parks, parks, meadows with regular hay mowing, etc.). For example, in a park ecosystem, like in the forest one there is no serious connection between the internal subsystems of biogeocoenoses – primary producers, phytophages, predators, parasites and, finally, reductants.

Mesostructure microdistrict – is represented by small green areas of the microdistricts. They, unlike large parks, forest parks and forests, do not significantly affect the climate of the surrounding areas, but create their own phyto-environment, which positively affects the state of wood, shrub and herbaceous plants, and also creates comfortable conditions for recreation. Plants of mesostructures form the unique ecological islands for the habitat of many representatives of the fauna. In old cities (Kyiv, Lviv, Odessa, Chernivtsi), the mesostructure is represented by inter–quarter (gardens, squares, boulevards, avenues) and intraquarter (gardens, garden plots) landscaping. In areas of new residential development, yard-gardens or yard–squares are common, which, according to the planning structure, do not differ much from the plantations of old building.

Mesophylls – are microorganisms that develop in the range of temperate temperatures.

Mesorelief – is a relief averaged between the macro and microrelief, which includes such forms of the earth's surface as the river's terrace, ravine, low hill etc.

Mesosaprobes – are plant and animal organisms living in reservoirs with medium contamination by organic substances. Their number is an indicator of water pollution; they contribute to its purification by their activity.

Mesotrophic plants – plants occupying an intermediate position as to the soil fertility between eutrophic and oligotrophic plants (e.g. fir).

Mesoxerophytes – plants occupying an intermediate position relatively to the moisture between the mesophytes and xerophytes (e.g., cumin, etc.).

Microclimatic function of green plantations – is to regulate the plantations of the main microclimatic indicators and create a comfortable environment.

Microdistrict – this is the organization of a residential complex, which provides the most necessary needs of the population (educational and economic activities, cultural rest, cultural and residential services for residents). It consists of groups of residential buildings, kindergartens, nurseries, schools, grocery stores, chemist’s shops, household and children's playgrounds near residential buildings, etc. Microdistricts are organized within a radius of pedestrian accessibility not more than 500 m.

Microfertilizers – are fertilizers, the active participant of which is the micronutrients necessary for plants in very small quantities (copper, boron, manganese, zinc, molybdenum, cobalt, lithium, iodine, etc.). The content of trace elements in plants is from 0.02 to 0.0001%, but their role in plant life is significant. The lack of microelements in the soil disturbs the normal growth and development of plants, reduces their yield. The source of trace elements is different salts, some industrial wastes; they are also in organic fertilizers. A microfertilizer is introduced directly into the soil, used for foliar application of plants, and also is a part of conventional and complex mineral fertilizer.

Mineral fertilizers – are minerals that contain nutrients essential for plants. The proper uses of mineral fertilizers in combination with other agrotechnical measures contributes to a significant increase in crop yield and plant decorativity and the increase of their resistance to adverse conditions. Nitrogen, phosphate and potassium fertilizers, as well as microfertilizers, containing microelements necessary for plants, are the most common in plant care.

Mixborder (mixed floral border) – is a flower-bed of elongated shape with a width of 1–5 m, usually with a curvilinear contour, which includes a wide range of perennials, bulb plants, as well as annuals, the selection of which should ensure continuous flowering. Recently, natural stone, low–growing forms of shrubs and ground cover plants are used in the mixborders. The mixborders are located along the alleys, tracks, and squares. Very large compositions of free outlines like "mixborder" are called the garden of continuous flowering. For a better view through the mixborder "dotted" picturesque paths of individual slabs are laid, which is also convenient for the care of plants. For a mixborder, a calm background is needed, here various combinations of flowering plants should be distinguished. This background is best created by dense plantations of shrubs , with leaves or needles of dark tones.

Model – a spatial model of the object, made of paper, cardboard, foam, wood; it is used to demonstrate design decisions of the territory.

Modernism – in art the general term used for emerging in the early twentieth century attempts to put an end to the artistic traditions of the nineteenth century; it is based on the concept of dominance of the form as opposed to the content. In fine arts, the direct representatives of this style are abstractionists; in literature writers experimenting with alternative forms of narration; in music – the traditional notion of the key has been replaced by atonality; in the architecture the central concepts are functionalism and the lack of decoration, refusal from various borrowings from past styles, the unity of constructive and artistic foundations, the diversity of forms, the use of frame structures and new building materials. The Garden in the style of modernism is a site clearly separated into zones where comfort and functionality are always considered in the context of a sophisticated planning solution. In the garden of miniature sizes, the rejection of the axial perspective in planning is acceptable, but it is more desirable to have terraces. A characteristic feature of the modernist garden is the construction of retaining walls, as well as dense hedges, which make it possible to divide clearly zones and mask unattractive landscapes.

Modular flowerbed – 1) a flower arrangement done in containers of various geometric shapes made of ceramics, concrete, metal or wood, which are installed in places where the creation of a stationary flower garden is impossible for various reasons; in such containers annual flowering plants are predominantly planted; 2) the composition, solved in the form of various forms (squares, circles, rectangles), repeated, which are set out in certain ratios; flowering and carpet plants, lawns, inert materials, water are included in the modular flower bed.

Modulation of species – is the alternation of specific points in a certain rhythm, the change of frames along a definite route. In the organized park ensembles, they vary in the range of 20-30-50 m.

Moisture content of the soil – the value that quantitatively characterize the ability of the soil in relation to water content. Depending on the conditions of moisture retention we distinguish between field, total, capillary, the smallest, complete, limit, maximum, molecular, absorptive molecular. Among them the main ones are the smallest (field), capillary and complete.

Moisturing indicators – plant species characteristic of certain hyhrotops (very dry, dry, fresh, humid, moist or wet soils), is one of the leading characteristics in determining the type of forest growth conditions and the planning forest meliorative activities.

Molding trimming – is usually used for trees in ordinary alley plantations in order to preserve the natural or artificial form of plants (ball-shaped, cone-shaped, colon–shaped), uniform location of the skeletal branches or to maintain a given shape in the hedgeraws**.** There are weak, moderate and strong trimming, the degree of which depends on the species of plants, their age and the crowns .

Monastic gardens – are an element of greenery landscaping in the Middle Ages, in which herbal medicinal and decorative plants were cultivated. The layout was simple, geometric, with a pool and a fountain in the center. As a rule, two tracks that intersected across divided the garden into four parts; in the center of this section, a cross was installed or a bush of roses was planted that symbolized the martyrdom of Jesus Christ.

Monitoring – a system for observing and controlling the environment of a person in order to develop measures for the protection, rationalization of using natural resources and the prevention of causative situations, harmful or dangerous to human health, the existence of living organisms and their groups, natural systems and objects . Besides observations, the monitoring task is also to assess the state of the environment and to predict its changes. There are biospheric (global), ecological, biological, sanitary–toxicological, international, regional, national, local, impactive, direct, distant, basic etc. types.

Monogarden – the territory where a collection of different forms of plants of the same species is collected; they are used when designing individual sections of large parks or botanical gardens.

Monumental art – the works of fine art, organically combined with architecture, as well as with nature, possessing an independent significant ideological and artistic content, embodied in broad generalizations, large, sometimes grandiose forms, including monumental painting and monumental sculpture.

Monumental sculpture – a special type of design of gardens and parks, designed to honour certain historical figures or historical events; it has the form of monuments, sculptural groups, memorial plaques, etc., installed in the most prominent places of the garden and park objects.

Monumental squares – are small green plantations that are created in memorable places near the monuments. For example, in Lviv, a regular parterre square in front of the Hill of Glory where the participants of the First and Second World Wars are buried; the world-famous miniature Lviv square, over which the monument to Adam Mickiewicz is erected.

Mountain landscapes – are spread in the mountains the natural-territorial complexes, common by structural-lithological, orographic and morphological landscape characteristics. They are characterized by high-altitude zone and layering of relief. Mountain landscapes peculiar trait is a contrast of natural conditions, due to different exposure of slopes, the geological structure, soil diversity, the diversity of vegetation changes and other causes.

Mulching – is a cultural practice, which consists of spraying the upper layer of soil with organic fertilizers: peat or compost, half-decayed leaves or straw with manure, as well as sawdust and sand. Mulch helps maintain moisture in the soil without further loosening after irrigation or rain, prevents compaction or destruction of the soil structure, the growth of weeds, it is a source of soil enrichment with nitrogen and ash elements, and also a good heater for perennials.

Mycorhiza – a stable symbiosis, which arises as a result of mutually beneficial coexistence of the mycelium of the fungus with the root of the higher plant. Under such contact, the fungus participates in the physiological processes of the host plant and promotes its nutrition (mycotrophic nutrition). By the nature of placing the hyphae of the fungus, there are three types of mycorhiza: ectotrophic (external), endotrophic (internal) and ectoendotrophic (mixed).

N

Nanorelief – is a relief with the height to several tens of centimeters, which naturally arises as a result of karst, thermokarst, erosion and other processes, as well as from the life activity of animals and humans. Characteristic features of nanorelief are a large spatial variability of sizes and forms, a close relationship with the properties of the substrate, the processes of soil formation and weathering, development and the state of vegetation. The main environmental functions of nanorelief are the diversification of the conditions for the formation and function of biocoenoses, the effect on the intensity of weathering, accumulation processes, living conditions and management of the population. Before the forest melioration development of sites with expressive nanorelief levelling of areas is used.

National Nature Park – is a protected park area of national significance with a strict visiting regime, which includes natural elements unique in its originality and beauty – rocks, waterfalls, canyons, mountains, forests with unique flora and fauna, lakes, geysers and other objects that have a national value. They are intended for the conservation of the native land, and are used for the purpose of tourism and as scientific centers. The first national park in the world appeared in the United States (Yellowstone National Park). Carpathian National Nature Park is the first and one of the largest national nature parks in Ukraine. It was created by the decision of the former U.S S.R. CM on June 3, 1980, No. 376.

Native species – the local breed of farm animals of any area or country. As a result of long-term breeding in the area native animals are well adapted to its climatic and economic conditions and have a number of specific features. Many native species are characterized by a unique gene pool that allows to use it in breeding work.

Natural and anthropogenic equilibrium – a secondary ecological balance, which is formed on the basis of the balance of human–altered components of the environment and natural processes.

Natural anthropogenic regime – is a combination of natural and anthropogenic factors that creates new environmental conditions for the existence of organisms and their groups.

Natural capacity – is an indicator that determines the ratio of volumes of used natural resources and the final production obtained on their basis. There are two levels of environmental indicators: macro level – the level of the whole economy and the productive or sectoral level. The reciprocal indicator for the ratio of the nature capacity is an indicator of the natural resource efficiency**.**

Natural conditions – a set of factors, forces, organisms, objects, phenomena, features of the natural environment, which are essential for the life and activities of human society. Unlike the natural resources natural conditions are not used directly in public production. There are the following groups: by certain natural components (geological, hydrological, hydro-climatic, soil-climatic) by territorial features, by temporal indicators, by types of nature use (natural conditions of agriculture lands, forestry farming etc.).

Natural equilibrium – the primary ecological balance of the natural system, formed on the basis of the balance of unchanged or little changed human components of the environment and natural processes.

Natural landscape – a landscape that is formed under the influence of only natural factors that have not experienced the influence of human activity (as opposed to the anthropogenic or technogenic landscape).

Natural landscape – a landscape which is formed or has been formed in the process of natural independent development, deprived of direct transformational influence of human activity. Sometimes natural landscapes are called the natural (background) part of any landscape without elements of material human activity.

Natural monuments – are non-renewable natural objects and landscape complexes that are protected by a state and have a special scientific, ecological, cultural and educational, aesthetic or historical significance. There are botanical, geological, hydrological, geographic and other attractions. In the broad sense, nature reserves are also understood as nature reserves, national parks, if they are standard or unique natural formations. Such sights are subject to certification, transferred under a protective obligation to farms or organizations at their place of location.

Natural regime – a combination of natural components of the environment and the effects of natural factors that creates the environmental conditions for life of organisms and their groups.

Natural reserves – are created for the purpose of preservation in natural state, zonal or common forest, steppe, and wetland ecosystems, that have scientific, environmental, aesthetic and cultural value and usually occupy a small area of 2-3 ha – 1-2 ha. This form of territorial protection of small objects is in most European countries, particularly in Ukraine. In home and foreign botanical literature they are also called reserves. In Lviv region 48 natural reserves with an area of 6502,3 hectares are taken under protection. They are the remnants of natural forests which are important for forestry farming; forest genetic reserves, which are used as seed plots for growing high quality planting material. The protected natural reserves require special protection from unwanted external anthropogenic impacts on functioning ecosystems protected on their territory.

Natural resources – natural resources: land, its mineral resources, flora and fauna, water reserves, atmospheric air, etc. The legal status of natural resources in Ukraine is determined by the Law on Environmental Protection, the Land Code, the Forest Code, the Fauna Law , the Water Code, the Law on the Protection of the Air and other legislative acts. The plots are divided into two large groups – inexhaustible and exhaustible. The inexhaustible ones include solar energy, wind energy, the natural flow of water etc. Exhaustible are resources, the amount of which constantly decreases in accordance with their extraction from the natural environment. They, in turn, are divided into regenerative– vegetation, fauna, fertile soils and others and non-regenerative – mineral resources, species composition of organisms, etc.

Natural resources cadaster – the systematic collection of information, that is compiled by continuous or periodic observations of relevant natural objects. In Ukraine the cadastre of land, water, forest and mineral wealth resources is introduced, a methodology of inventory of floral, faunal, and recreational resources, the inventory of landscapes is elaborated.

Natural selection – is a continuous process which occurs in nature and leads to the emergence of new forms, species and varieties. Thanks to it, a relative determination in the structure and physiological processes of organisms which are well adapted to life in different environmental conditions occurs. The basis of natural selection is the variation, inheritance and survival.

Natural soil fertility – is formed by evolutionary way due to inherent processes of accumulation of fertility under the influence of soil–forming processes of landscapes.

Natural system – a system consisting of natural structures and entities that are grouped together at the higher levels of organization into functional, environmental components. For example, systems of higher levels of organization are population, consortium, biocoenosis, and biosphere.

Natural vegetation – phytocoenoses, formed under the influence of natural factors.

Natural–anthropogenic equilibrium – a secondary ecological balance, which is created on the basis of a balance of human–modified environment–forming components and natural processes.

Natural–anthropogenic regime – is a combination of natural and anthropogenic factors that contribute to the creation of new ecological conditions for the existence of organisms and their groups.

Naturalization – a complete adaptation of organisms to new conditions of existence, the final entry of introducer in an ecological niche earlier alien to it ecosystem, it is associated with the acquisition of these organisms of special adaptation. During naturalization significant changes caused by new conditions, changes in the way of life that are characteristic of the metabolism of organisms, which, however, do not violate the structure of the genotype, are possible. The easiest and fastest are naturalization organisms with a high growth rate and the ability to grow rapidly, with a wide ecological valency, particularly weeds, animal pests, which successfully withstand competition with other species. Sometimes naturalization refers to the relocation of plants or animals to new places, where conditions of existence are similar to the previous ones.

Nature conservation – the complex of measures on protection of species and their communities from degradation and destruction, the environment of their existence. Complex preservation is a system of methods for the preservation of plants or animals simultaneously in situ and ex situ (in vivo, in vitro). Ex situ preservation is a method of specific keeping living organisms outside their natural habitat in the form of seeds, pollen, vegetative parts, tissue or cell cultures or adults. The preservation of the habitats is carrying out measures special to preserve the habitats of each important species. Conservation of natural ecosystems carrying out special measures to ensure the development of ecosystems without anthropogenic influence (conscious and unconscious, direct and indirect) that disrupts, controls or leads to a change in their structure and functions. In addition to direct human intervention in the development of natural processes, such preservation involves a reduction of the indirect effect of agriculture through the transformation of environmental super–systems, and involves the modification of the biosphere as a whole.

Nature use – general principles and regional features of using natural resources by a society at the given stage of its development. The rational use of nature is a scientifically grounded use of natural resources without significant loss of a certain type of resource of its quantitative and qualitative potential, protection and its reproduction. In agriculture, the rational nature management implies economical exploitation, reproduction and cultivation of soil-land, biological, water economic, raw materials and other types of resources used by this industry.

Negative artificial selection – the selection of trees for cutting while thinning and felling (the worst trees are cut), harvesting the plantations that do not correspond to their biological properties, conditions of growth, unpromising for further cultivation.

Nest epiphytes – plants whose roots form a tightly interwoven mass, resembling a bird's nest. Between the roots ants live, due to which a gradual accumulation of humus occurs.

Nitrification activity of soil– the indicator of the intensity of nitrification expressed as the mass of nitrates formed by nitrificate microorganisms of soil mass unit per a time unit.

Nitrogen bacteria – a group of freely existing bacteria (Azotobacter etc.), aerobic, capable of fixing nitrogen from the air and thereby enrich the soil. The group of azotobacteria in the wide understanding of a term sometimes includes all soil microorganisms that can independently or in symbiosis (for example, nodule bacteria on the beans) fix the atmospheric nitrogen. Azotobacteria are included in the composition of bacterial preparation azotobakterin (otherwise-azotogene), which is used for fields fertilizing.

Nitrogenous fertilizers – inorganic and organic substances which are applied into the soil as the source of nitrogen nutrition of plants. The main forms of mineral nitrogen fertilizers are nitrate and ammonium. The nitrogen is readily available for plant compounds in them. The rates of application of this type of fertilizers depend on soil and climatic conditions and biological properties of cultivated plants.

Nurseries – are specialized farms that are engaged in reproduction and growing planting material of plants. Nurseries are the main suppliers of seedlings and introducer seedlings of fruit, berry and ornamental plants used in green landscaping and for the enrichment of local flora. The main production areas of nurseries are: a breeding zone (providing nurseries with seeds, cuttings, sprouts, etc. and including mating–seed and mating-cuttings, plots, arboretum, protective belts); zone of seedlings (a sown area for growing seedlings and a rootstock and an area of vegetative reproduction for rooting of cuttings); zone of seedlings (trees for growing ornamental trees and shrubs); floriculture and fruit crop area; economic zone (includes a land plot , a greenhouse, meadows, roads, water reservoirs etc.).

Nutrient soil regime – is a change in the content of nutrients available for plants during the growing season. It depends on the gross reserves of nutrients, the conditions of their mobilization and the introduction of fertilizers.

Nutrition of plants – the introduction of organic and mineral fertilizers for plants during their growing season in order to increase their yields, it is used in the practice of decorative floriculture, green landscaping, in park and forestry farms. The excessive feeding rates of plants in some cases lead to inhibition of plant development, and sometimes to chemical pollution of the environment .

Nymphs – are sacred groves near a spring, decorated with sculptures, colonnades, etc. They are characteristic for the gardens of Ancient Greece, where, according to imaginations, were nymphs and muses; later they were spread in the Renaissance and Baroque gardens.

O

Oasis – the territory in the zone of hot deserts and semi-deserts with lush vegetation due to natural or artificial irrigation. Agriculture is possible here.

Object of landscape architecture (landscaping) – the territory of the city, rural area, suburban area, which has certain limits and is organized in a certain volumetric spatial system; it is designed for various needs: rest, protection, decrease of adverse effects on human beings, protection of nature, restoration of ecological balance in the region, etc.

Occurence – the frequency of finding a particular species in phytocoenosis or the probability of finding it on a trial site. Usually the "root" occurrence (by the place of rooting) is taken into account. It depends on the size and placement of the population. They are determined by the accounting of species on a large number of test areas (0.1-1 m^2) and expressed as the percentage of areas with species participation.

Ohtohydrophytes – are plants that are associated with the coastal, swamp and terrestrial ecophases for most of the growing season, and only for a short time – with limnophase. The life cycle is prolonged. This is a large group, mainly of reed groups with large and powerful surface organs and a developed root system. They differ from other groups by size and physiognomy. The root system is located at a considerable depth, as a result of which this group of species performs a coast-fixing function and participates in the processes of overgrowing of reservoirs in the event of its lowered level and contributes to the use of water reservoirs. The function of species in the accumulative and erosion zones is the same. Propagation is vegetative and, occasionally, is generative (anemo–, hydrochloria). Functions in groups: species habitat determines their position in the littoral as the edificators of the groups of Phragmition communis, Sparganio-Glycerion fluitans, Phalaridion urundinaceae (partially). The representatives are Typha angustifolia, T. latifolia, Phragmites australis, Scirpus kacustris, Acorus calamus.

Oligohemerobic biogeocoenoses – are forests, meadows, marshes, covered by economic activity, which does not significantly change the structural and functional organization of the ecosystem. There is an insignificant anthropogenic impact here. Oligogemerobic biogeocoenoses include indigenous and derivative plant groups, the development of which only to a certain extent is directed by a person (promoting natural regeneration without sowing and subplantation, sanitary felling and carving, which do not change the ratio of individuals in the tree stand and subsurface tier). This category also includes indigenous and derivative associations that are subject to human intervention .

Oligotrophy index – an indicator of low availability in the soil of easily digestible nutrients, which is expressed by the ratio of the number of microorganisms growing on "poor" nutritional environment, to the number of microorganisms on "rich" medium.

Open-air cage (aviary) – a large cage, pavilion or an entire plot of land in a zoological park, surrounded by a ditch or net where birds or animals are kept.

Optimization of the environment – a system of measures aimed at creating the environment to a state that meets best the needs of life and human activities.

Optimization of the landscape – a complex of measures to preserve or modify existing and formation of new relationships between different components of the landscape with the aim of its rational use, preserving the useful properties (natural resources) of the landscape and preventing their possible loss by establishing the maximum full compliance of the natural potential of the landscape with socio–economic functions. In the optimization of technogenic landscapes, the focus is on the purposeful reproduction or reconstruction of natural and man–made complexes, which provides the restoration and increase of their productivity, nature conservation, economic, sanitary and aesthetic value, some of the main measures in it are forest and land reclamation.

Optimization of vegetation – a system of measures aimed at bringing vegetation to the state that most fully meets the needs of a man.

Optimum – a set of favourable conditions for the vital activity of an organism; the value of the factor corresponding to the most optimum indicators of an organism vital activity.

Optimum landscape – is a landscape, the structure and functions of which are as close as possible to the capabilities and needs of the normal, balanced development of its separate components or the already defined purposes of its use. In some cases, people take actions that promote or directly are aimed at optimizing the landscape.

Optimum of a type – a complex of environment, which provides maximum biological productivity. There are optimum of a type autecological (conditions under which the species reaches the maximum development in the absence of competition) and optimum of a type biocoenotic (conditions under which the species reaches maximum development in the presence of competition).

Optimum soil density – the density of the soil, which creates the best conditions for the growth and development of plants. The optimum density for most field crops is in the range from 1.1-1.3 g/cm^3, in some cases – 1.4 g/cm^3. For example, root and bulb plants require better soil loosening.

Ordinary (garden-park) lawns– make up the largest part of the turfgrass gardens and parks, boulevards and the Central areas of forest parks, yard territory, interdistrict objects. The basic requirements for conventional lawns are a mechanical damage resistance, durability, decorativeness, etc., which are achieved by using grasses with various types of rootstock. The mixture includes from three to five types of grasses like Kentucky bluegrass, perennial ryegrass, etc.

Organ – is a part of an organism that performs certain functions and is characterized in this connection by certain features of the structure. Vegetative organs of plants are a stem, a root, a leaf; reproductive (generative) are a flower, a fruit, a seed.

Organic and mineral fertilizers – fertilizers, which contain organic matter and mineral compounds associated with the organic substance chemically or by adsorption. They are made of peat, humus, shale and silt (sapropel), saturating with ammonia water and mixing with phosphorus–potassium fertilizers, we receive peat-mineral ammonia fertilizers.

Organic fertilizers – are fertilizers in which all the nutrients essential for plants are predominantly in organic form, particularly nitrogen. Organic fertilizers include manure, animal urine, bird droppings, compost, green (sederal) fertilizer, pond and lake mud, waste of plant and animal origin, etc. During composting and after introduction into the soil, the organic fertilizers under the action of microorganisms are decomposed, humus and mineral compounds of nitrogen, phosphorus, potassium, sulfur and other plant nutrients are well-digested by plants.

Organic variety of soils – soils provide shelter for a large variety of organisms, useful for agriculture. The roots of various crops are very different. It helps absorb nutrients and feeds crops, protects soil from erosion and enriches it with organic matter. Microorganisms and other living beings of the soil play a key role in the decomposition of the products of life of agricultural crops activity. However, some microbes are pathogens of crops, while others, such as micorhyzes and rhizobia, participate in symbiosis and work to strengthen mutually beneficial relations between crops. Soil microorganisms provide food for other soil inhabitants, some of them are natural enemies of plant pests. Other microorganisms are direct antagonists of plant pests.

Orientation – the location of separate elements of planning, depending on the exposure of the slope, relatively to the sides of the world: north-south (N-S), west-east (W-E); it is very important in the design of playgrounds for children , the location of trees on the sidewalks, the organization of sports complexes, etc.

Ornamental flowerpots – a special container, in which a pot with room flowers plant is placed to give more decorative effect. The elegant colourful pots create a particularly attractive background for plants, and act as an independent interior decoration. Pots are very diverse, have the original, sometimes bizarre shape. They are made of wood, ceramic, metal, plastic, wicker, straw, wire, thick thread (macrame) etc.

Ornamental horticulture – is the branch of agriculture which includes: green building, the maintenance of green plantations, the formation of landscapes, floral design areas, and cultivation of seed, flower and ornamental crops and their maintaining up to the age of demolishing.

Ornamental plants – a large group of trees and shrubs as well as herbal plants that are used for the needs of external and internal green landscaping. Ornamental plants are divided into the following groups: 1) open ground plants, biological properties of which allow them to grow in the natural conditions of the area in the open air; 2) plants in greenhouses, which include tropical and subtropical, the so–called greenhouse or room that require constant temperature, lighting and humidity, and in the open ground can grow in containers during summer.

Outline – 1) eye-measured plan of an area, made by hand, indicating the lines of the roads, contours of grounds, buildings, ditches etc.; 2) a linear outline of an object, contours of a tree or shrub; it is performed during instrumental, theodolite, tacheometric and other types of surveys.

Outroot nutrition – a way of plants nutrition through the leaves by spraying with solutions or treating them with fertilizers. In this case, synthetic urea, superphosphate, microfertilizer are mainly used.

Overburden breeds – rocks that overlap the useful raw materials and are subject to removal and movement, as a dump soil in the process of open mining.

P

Palace-park complexes – large historically formed ensembles, which include a palace, a park, economic and cultural buildings. Mostly these are monuments of architecture and garden art, which are now used as museums–reserves.

Palestras – private gymnastics schools that were popular in the ancient Greece, where boys from 12 to 16 years old were engaged. The training program included running, jogging, fighting, jumping, throwing spears and discs, gymnastics exercises, swimming. They had open platforms, racetracks, gymnastics halls, pools.

Panorama, panoramic landscape – a picture, for a coverage of which it is necessary to turn the head across its entire width, that is to increase the angle of its perception. The panoramic landscape forms a few simple or complex landscapes, connected in composition, united by a common plan, with more or less the same plot. It's like a large–scale picture that can only occur in the open spaces. A panorama image can be obtained from a series of drawings or photos made from one point.

Panphytoty – is a mass plant disease, which usually damages several states or continents.

Paradigm – is a universally accepted scientific achievement that, during certain time, provides a model for problem–setting and its solution in a scientific society. For example, on the basis of the Darwin P., a biological science about natural selection and struggle for existence arose, which was subsequently replaced by three special Ps: autecological reductionism, synecological reductionism and systemic approach.

Paradise, a garden of paradise – an ancient Persian garden with a lot of roses, water reservoirs etc. and the presence of various species of wild and tamed animals. Persian "paradises" – these are not European medieval monastery courtyards, but large parks. Ancient Greek historian Xenophont (430-355 B.C.) depicts the gardens of the residence of King Cyrus the Younger in Sardis. The garden had a regular planning, perfect hydrotechnical structures and a variety of plant varieties. Fruit and ornamental plants were planted there in equal numbers. There was a zoo, which was a place of hunting for animals .Garden paradises were fenced with high walls. In such gardens sometimes military games were arranged.

Parapet – a low fence in the form of railing, used for fencing terraces, transverse step marches, steep slopes and roads. In ancient times, it was a stone rampart in fortifications to protect against enemy shots .

Park – a large territory (5-15 ha and more), designed for recreation of urban or rural population, which has the form of a land plot, on which elements of the landscape, buildings, structures are organized into a certain volume-spatial system in accordance with the laws of composition; parks can be multifunctional and monofunctional, or specialized (children's, sports, for walking, exhibition, ethnographic, zoological etc.), urban and district, country-side; by the nature of the landscape – forest parks, meadow parks, water parks; by the nature of use – tourist, scientific and cognitive, parks– monuments of landscape architecture, memorial, resort etc.; by area – small (5-20 hectares), medium (20-100), large (100-500 hectares) and very large (over 500 hectares).

Park bridge – is an engineering structure that has both utilitarian and decorative purpose; it serves for connecting opposite shores of water facilities, elements of the track-trail network; they can be opened and closed (pipelines); the latter are used for the transition through open reclamation and drainage ditches, streams and small rivers at the objects of the forest-park zone.

Park channel – a water element of the park of linear type, the main function of which is to supply water to the fountains or cascading devices, the communication of system of ponds and other water bodies. Added by viewing sites, bridges, decorative elements etc., the channels play an important role in shaping the artistic qualities of the park landscape. It is widespread in Italy in the Renaissance period, and in France during the Baroque period.

Park landscape – a biological object which is formed in accordance with the conditions of environment taking into account the requirements of man in comfort conditions for rest. Each park landscape is characterized by an appropriate list of components, way of their location and differs from other parts of the park by its functions and artistic image. Park landscape is determined by the specificity of the ecological basis: planning, spatial and landscape structure, buildings, small architectural forms and arrangement.

Park– monuments of garden art – are valuable examples of park construction, which have natural-scientific, didactic, historical–memorial, protective, cultural, aesthetic and social significance. Garden art is the highest manifestation of the harmony of man and nature. There are more than 500 park–monuments in Ukraine, the landscape, aesthetic and social significance of which is enormous. Altogether, on the territory of our country there are 88 parks, monuments of landscape architecture of national significance.

Park stairs – a special design for the transition from one level of relief to another, which plays an important architectural and artistic role in the park landscape. According to their purpose and design, stairs are divided into: main ones (parade, with sculptures, flower beds, lighting, with the width up to 10 m and more), secondary (located on side lanes and tracks, with the width from 2.5 to 10 m) and tracks (laid on walking tracks, with the width up to 2.5 m). The slope of the park stairs is 1: 3, the minimum width is 40 cm, the height is 8, 12 or 15 cm. The width of the stairs is determined depending on the specific conditions and aesthetic considerations of the author of the project, but should not be less than 75 cm.

Park type of landscape – is a transition from the forest to the meadow that has an open meadow with picturesque individual trees and groups of trees (sometimes with massive trees) and shrubs. The ratio of the projected area of crowns of trees and shrubs to the area of the lawns in this type of landscape garden is about 1: 1.

Park-exhibition – is a complex of pavilions and grounds for the organization of exhibitions of city, region or state importance on various subjects, educational and spectacular buildings, objects of domestic use. Not less than 35-40% of the territory of the park exhibition is allocated to plantations, and improvement is carried out at the level of the city park.

Parkways – special tracks, arranged along freeways for the free movement of pedestrians and cyclists; they originated in the United States from the beginning of the twentieth century.

Parnassus – is a tall mountain in Greece, where, according to the legends, Apollo and the muse lived which contributed to the development of art and science. Later, artificial slides in parks with spectacular platforms, from which there were beautiful landscapes on all sides were called Parnassus.

Parterre – a decorative composition, located on a horizontal plane, created from plants, inert materials or water. As a vegetative material, a lawn, flowers and shrubs are used that withstand a low cutting. The inert matter can be represented by sand, birchwood, crushed glass and brick etc. The composition of the parterre includes pools, fountains, sculptures, vases, container and shaped plants (boxwood, thuja etc.).

Parterre lawn – a kind of decorative lawn, which is arranged on the foreground plans of garden park compositions, at the entrances to public buildings, around monuments, fountains, sculptures, ornamental reservoirs. Preferably, they are arranged in squares of rectangular or square shape, as well as in areas in the form of an oval or a circle. Parterre lawns must maintain a monochromatic colour throughout the entire period of vegetation and have a low density, uniformly closed grassland . For the creation of parterre lawns, perennial grass, low–lying, with a thin structure of stela and leaves, a low planting nest and its high developmental intensity is used. This type of a lawn is created mainly from one or two types of grasses that form homogeneous grassland.

Partial covering – is a protective covering of plants of the same species.

Pastoral degression – the sharp deterioration of pastures as a result of overgrazing, trampling. This is one of the dangerous options of antiecological use of nature by man.

Pasture resources – a part of vegetation cover, used as a pasture for domestic and wild animals.

Pavilion – a building used in gardens and parks in places of quiet rest, on the playgrounds, on the turns of the alleys. It is mainly mounted on wooden or metal structures with a slight overlay of plastics, plywood or hard fabric; in some cases it is used as an exhibition space.

Peat introduction – is the introduction of peat mainly in sandy soils to improve its water and physical properties and increase productivity. It is also used to meliorate mineral parts of worked out peat bogs or short-profile peatlands. The application of 180 t/ha for sands increases the fertility to the level of peat-glued soils.

Peat-podzolic soil – soil, which is formed in poorly–drained areas in the conditions of the periodic but prolonged waterlogging, that leads to gleying combined with podzolization and lessivage.

Pedotrophy index – an indicator of the functional structure of microbial coenosis of the soil, expressed by the ratio of the number of microorganisms growing on agaritine soil extractor, to the number of microorganisms growing on the "rich" medium.

Perennials – herbal plants that live for more than two growing seasons. In perennials root system and modified underground organs – (tubers, rhizome), in some – basal rosette of leaves withstand the winter**.** Perennials include many species of plants with beautiful flowers, decorative leaves and colourful fruits or curly stem. Their value lies in the fact that growing perennials is much cheaper than growing one and many biennials, since the seed or vegetative propagation of most of them does not need special equipped greenhouses; perennials are propagated in open soil. There is a conventional division of perennials into 4 groups: bulbs (tulips, hyacinths, narcissus), rhizomatous and bulb–rhizomatous (delphinium, gladiolus), ornamental foliage and covering soil (Sedum, Sacra, Phlox subulate). They are widely used in gardens, parks for flowerbeds, carpet flower beds, borders. Some perennials overwinter in the open soil, others require shelter in winter, in the case of the third group we have to remove from the soil the underground part and store it in a dry place at the temperature of 5ºC. Perennials are propagated by seeds, cuttings (summer herbal or root), bulbs, tubers etc.

Pergola – a special support in the form of light arched, semi–circular, gallery or hinged overlapping of tracks or parts of the play grounds, under which the places for rest are located; it has a kind of openwork design from a series of arches, frames or paired pillars, tied up at the top with a wooden or metal grille; pergolas often are drawn out by spiral plants.

Perhydrophytes – plants of wet marsh–forest–meadow ecotops with maximum capillary moisturing the root–bearing soil layer (W pr = 270-310 mm).

Peristyle – is the inner courtyard with a swimming pool, a fountain and a flower garden, surrounded by a colonnade, which is characterized by closeness and regular planning. It became widespread in the times of Hellenism in Ancient Greece, and later – in the Ancient Roman .

Permanent reclamation – it is carried out on lands where changes of the target use according to the project are not foreseen.

Permissible boundaries of environment changes – the maximum number of changes (their total force) in an environment beyond which its stability is violated and it passes into a new qualitative state – is destroyed.

Permissible recreational load – an indicator of the number of visitors to the park (object) per area unit, in which the preservation of natural components of the environment and its cultural and historical values are ensured; with increasing the loads, the degradation of the park landscape, the deterioration of the psychophysiological comfort of visitors, sculptures, plant communities etc. occur.

Pests (diseases) of plants – a conventional notion used to refer to the species of animals, plants, fungi and microorganisms that cause economically or environmentally significant violations of plant life. Mass reproduction of diseases, pests is called epiphytotia. Local epiphytotia usually occupies one territory for several years. Such diseases (pests) persist for a long period in the soil, on burnt residues and develop actively under favourable conditions. The beginning of such infection occurs slowly and gradually extends when many weakened or plants susceptible to this disease are located on one area. But if the accumulated infection is high and the plants are more susceptible, the disease will occur much faster.

Phenotype – a set of features and properties of the plant organism, which are formed in the process of interaction of its genotype with the external environment. The term was introduced by Danish biologist, scientist in the field of genetics V. Johansen (1909).

Phosphate fertilizers – fertilizers containing the phosphorus necessary for plants, the presence of which contributes to the development of root systems of plants, increases their winter resistance and yield. Plants absorb phosphorus predominantly in the form of salts of orthophosphoric acid (H_3PO_4). By the availability of phosphorus compounds to plants phosphorus fertilizers are divided into the following forms: 1) water-soluble (superphosphate, ammophos); 2) citrate-soluble – little soluble in water, but well –in the solution of ammonium citrate (precipitate); 3) compounds that do not dissolve in water, but dissolve in 2% solution of citric acid (thermophosphate); 4) slightly soluble – only dissolve insignificantly in 2% citric acid and are well soluble in strong acids (phosphorous and bone flour).

Photoperiodism – is the reaction of plants to the ratio of light (daytime) and dark (night length) periods during 24 hours. Depending on the reaction for the duration of the day, the following types of plants are distinguished: short–day plants (millet, asters, rice etc.), long day (wheat, rye, barley etc.) and neutral (buckwheat, peas, watermelon, etc.) Photoperiodism was firstly described by american biologists K. Gertner and G. Allard (1920).

Physical soil degradation – is characterized by impaired soil structure, recompacting root layer, which is caused by imperfect technology of soil cultivation. The result is the deterioration of water-physical properties: dropping of filtration capacity, reducing the porosity and aeration, the formation of so–called "compacted cushion" at the depth of 70-90 cm.

Physical–geographical zone – a large part of the geographic zone, characterized by a certain ratio of heat and moisture, domination of the watersheds of any zonal type of landscape; the decisive factor in the allocation of zones is the ratio of heat and moisture in the middle of the belt.

Physionomic principle – is the principle of the formation of vegetation in gardens and parks by the harmonious combination of form, texture, colour and architectonics of plants crowns, their size and developmental capacity depending on environmental conditions; when choosing an assortment, their ecological compatibility is taken into account; one or two species should occupy a dominant position, others – concomitant, subordinate.

Physiocoenosis – is a functional and territorial ecological unit, which combines large ecosystems (biogeocoenotic combinations) and techno–structures that are linked by mutual influence and human activity. The space of the physiocoenosis coincides with the landscape.

Phytocoenoses series –changes in the phytocenoses in space, due to more or less discrete changes in the external conditions and changes in the groups of the habitat.

Phytocoenosis – according to the definition of V.M. Sukachov (1975) it is a collection of plant populations on a certain territory, homogeneous in species composition, structure and interaction of plants with each other and the interaction of plants with the environment .The most effective forest plantation is the phytocoenic optimum – a state in which both the composition and biological state of the tree and shrub phytocoenoses, and the productivity are optimum.

Phytocoenotic optimum of a species – phyto-environment conditions, in which the species can flourish due to the strong competitive effect of other components of agrophytocoenoses.

Phytoclimate – a climate transformed by plant communities as a result of the cumulative effect on its components, mainly those agents (physical and chemical) that they release into space. At the same time, they affect not only other plants beyond their disposition, but also the abiotic factors that become less suitable and favourable for the growth of other plant species.

Phytoclimatic zones – the division of the territory of Ukraine according to the common bioclimatic indicators, which significantly affect the development and sustainability of forest ecosystems. For the first time they were proposed by D.L. Armand and S.I. Silvestrov (1965). In Ukraine, there are 3 phytoclimatic zones: Polissya, Forest-steppe and Steppe, which, in turn, are divided into 8 sub-zones.

Phytocoenic optimum – a set of the most favourable environmental conditions in which the plants of this species can play an important role in phytocoenosis.

Phytocoenology – is a science and a component of geobotany studying plant communities (phytocoenoses) from all possible points of view (structure, formation, development, productivity, connection with the environment, their distribution on the Earth, patterns of occurrence etc.).

Phytocoenosis layer (geobotanical, coenotic, grouping) – a layer formed by one vegetative eco-biomorph (trees, shrubs, herbs) and which decomposes into tiers (terrestrial, roots etc.) and layers (leaves, trunks). It is the main structural, at the same time, ecological and energetic part of phytocoenosis, formed by a population of a dominant or sub–dominant one and the same eco-biomorphs. There are the main layer (woody in the forest) and secondary (shrub, herb and others in the forest).

Phytocoenotic area –the area of species caused by relationships with other types of phytocoenoses.

Phytocoenotic principle of plant selection – it takes into account the possibilities of joint growth of plants within a specific plant group (phytocoenosis); it is determined by the speed of growth, light-emitting and shadedness of plants, allelopathic effect, the competition of root systems, etc.

Phytodesign – design and practical use of plants to improve the human conditions in artificial systems (houses, industrial enterprises, educational institutions, etc.), solving aesthetic and medical and biological problems associated with the isolation of man from natural plant environment. A new direction in the design of the subject world is associated with plant elements. The basis of phytodesign is the aesthetic value of plants, since they are beautiful and stimulate feelings .

Phytoenvironment – is a specific condition that is created by plants on a particular area due to its aesthetic and microclimatic properties, as well as sanitary and ecological functions that make it possible to improve significantly the habitat of people.

Phytogenic changes – one of the types of nutrient changes that occur when a sudden mass reproduction or the penetration into phytocenosis of any kind of plants take place, causing changes of the whole phytocenosis.

Phytoindication – is a method in which tests use indicator plants .It is applied in geology (in the materials search), hydrology (in determining the quality of groundwater), soil science (in clarifying the boundaries of soil distribution types). At the same time indicators are the species composition of plants, their morphological and chemical structure.

Phytomass – is the total mass (in raw or dry state, in mass of carbon) of all plants or their parts, systematic or ecological groups within the ecosystem or a part of it. The part of phytomass (produced by cultivated plants including agricultural crops and used by a man (fruits, seeds, stems, etc.) is usually called a crop.

Phytomelioration – 1) a set of measures for the improvement of environmental conditions through the cultivation of vegetation or the maintenance of natural plant groups (forest belts, trees and shrubs vegetation, etc.). There are humanitarian phytomelioration (the improvement of the physical, moral and spiritual natural environment of a person), environmental protection (the preservation and protection of ecosystems, the creation of remissions, habitats of wild animals), bio–production (increasing the quantity and quality of products useful for humans, protecting a certain resource from destruction and degradation) , agricultural (creating an optimum environment for the existence of agricultural crops and animals) and engineering (the protection of certain objects from the adverse effects of natural and human factors; 2) the field of applied ecology, which includes the research, forecasting and use of plant systems for improving the geophysical, geochemical, biotic, spatial and aesthetic characteristics of the environment, designing and creating artificial plant communities (including the aimed use of natural phytocoenotic cover) with high transformative physical properties of the environment.

Phytoncides – biologically active substances formed by plants that kill or suppress the growth and development of bacteria, microscopic fungi and other forms of microorganisms. The term was proposed by B.P. Tokin in 1928 .The typical representatives of phytoncides are essential oils, which are extracted from plant material through industrial technology. Phytoncides are also called plant–secreted fractions of volatile substances that are almost impossible to collect in significant quantities. The chemical nature of phytoncides is not essential for the function being performed, it may be a complex of compounds – glycosides**,** terpenoids, etc. the so–called secondary metabolites. According to phytoncidic properties, wood species are divided into five groups: the most phytoncidic (hawthorn, common chestnut, white fir, western tuya etc**.**), strongly phytoncidic (forest beech, spruce and European fir, greek and black walnut ,pine etc.), medium phytoncidic (common currant, common honeysuckle, Siberian larch etc.), slightly phytoncidic (smooth elm, evergreen boxwood, Siberian spruce etc.), the least phytoncidic (common robinium , European barberry etc.).

Phytotherapy – the treatment of people with medicinal herbs, in which the ingestion of infusions of various herbs and plants is beneficial for the work of the whole body**,** blood and vital organs are purified, slags and toxins are removed, and its protective functions are increased. In this case there is no side effects on the organs, as it is often in the case with the chemical treatment. Phytotherapy is one of the most ancient sciences, which appeared six thousand years ago. For many years the mankind has gained tremendous experience in herbal medicine. The effects of herbal medicines are determined by active substances: alkaloids, glycosides, tannins, essential oils etc. Herbal preparations do not completely replace synthetic drugs, but nowadays phytotherapy is experiencing its second birth, having several advantages over other methods of treatment.

Pilon – in Ancient Egypt, it is the monumental facade of the temple in the form of two columns, narrowing to the top, or towers with an entrance portal between them. Similar buildings decorated the entrances to the park. The pilons were erected on central squares and other front places.

Pinching – removing the tops of the growing shoots. It is widely used in ornamental horticulture and floriculture. This technique makes it possible to form crowns, delay the growth of some shoots and increase the growth of others :1-2-year-old sprout of a tree branch or bush has buds along its length, from which lateral shoots develop at the beginning of the growing season; 2 – laying crowns and pinching: A – laying crowns, B – shortened lateral shoots . In flower gardening, pinching facilitates the formation of a greater number of flower buds on one stalk.

Plain garden – a type of Japanese garden (Japanese "khoraniva"), which is arranged on a flat terrain. Spatial unique beauty is created thanks to the harmonious combination of stone, trees, shrubs, herbal plants, water reservoirs, streams and stone lamps.

Plain landscapes – a class of geographic landscapes, uniting natural and territorial complexes with the same common morpho-structural features, which are associated with vertical changes in the balance of heat, moisture and biochemical processes. In Ukraine, the plain eastern European landscapes are predominant, among which there are zonal and sub-zonal types that change in latitude direction: mixed-forest, broadleaf-forest, forest-steppe, dry steppe ones. Natural plain landscapes of Ukraine have been changed to a certain degree by human economic activity.

Planning a park (object) – the territorial structure of the object, its spatial and functional structure, the location of centers, sites, roads, entrances, vegetation; it is determined by specific landscaping, social, architectural, construction, economic, engineering etc. conditions.

Planning felling – a kind of reconstructive fellings in parks, which helps improve the spatial arrangement of plantations. Such felling is obligatory under the location of park structures, the construction of roads, paths, etc.

Plant ecology – the science of relationship and interaction between plants and their environment. Ecology studies the influence of the environment on the form, construction, chemical co-operation and all life manifestations of plants and their distribution.

Plant ecology – the science that studies the aggregate relationships of plants and plant communities with environmental factors. Plant ecology includes autecology and synecology.

Plant group, phytocoenosis – is a set of plants that occupy a homogeneous portion of the earth's surface and are in close interconnection with each other and the surrounding environment.

Plant growth regulators – physiologically active substances, with which you can change the biochemical processes occurring in a plant. By the nature of action, all growth regulators are divided into three groups: activators that enhance the growth of plants; inhibitors that inhibit growth; substances that cause lethal changes in the plant. The same physiologically active substances, depending on the concentration, may exhibit activating, depressant or lethal effects on plant.

Plant nutrition area – is the area of land that is necessary to provide the optimum conditions for soil nutrition of plants (varies with increasing their age).

Plant protection – the system of measures to control pests and diseases of plants used for economic purposes (forest, meadow, cultural, decorative etc.). Measures in plant protection also include protection of vegetation from the harmful effects of pollutants, natural forces, excessive anthropogenic load and other factors.

Plant reproduction – is the process of reproduction by a plant organism of similar individuals, which ensures the continuity of existence, conservation and distribution of the species. There is sexual and asexual (including vegetative) reproduction. Potentially organisms can multiply in geometric progression.

Plant resources – a part of natural resources, represented by plants, which are used or can be used by a man for direct or indirect consumption, the creation of material wealth, the improvement of living conditions.

Plant viability – the ability to vegetation and restoration without losing the vital qualities of growth, the decreased activity of physiological processes in the conditions of adverse factors influence (drought, lack of humidity, low temperatures, air pollution, dust, recreational activity etc.)

Plant world – is a part of the living nature, the biosphere of the Earth, which is formed by plants. It has a great diversity both in shape and size, and in the complexity of the structure. As a part of the plant world of the Earth it has about 500 thousand species, forming flora.

Plantation loss – is the process of plantation loss of basic vital functions and the cessation of the trees life, due to the cyclic development of plantations (natural depletion) when reaching a critical age or as a result of adverse natural and man–made causes that weaken forest stands and cause the stability loss. It is characterized by the persistence of the skeletal branches, the crown of trees, and the collapse of plantations.

Plantation tier – a tier of a tree stand or a set of other plants that occupy a definite position in the vertical structure of plantations and have the appropriate regime of environmental conditions.

Plantations of general use – green plantations, which are located on the territory of a city and district parks, specialized parks, parks of culture and rest; on the territories of zoos and botanical gardens, urban gardens and gardens in residential districts, interblocks or in a group of dwellings; squares, boulevards, plantations on the slopes, quays, forest parks, meadow parks, hydroparks etc. which have a free access for rest.

Plantations of limited use – are plantations in residential buildings, schools, preschool institutions, cultural and educational institutions, higher educational establishments, sports facilities, health facilities and sanatoriums, industrial enterprises, warehouses etc.

Plantations of special purpose – plantations of highways and streets; on areas of sanitary protection zones around industrial enterprises; exhibitions, high voltage transmission lines; forest-meliorative , water–protective, wind-protecting, anti-erosion, plantations of nurseries, floricultural farms, vintage plantations within settlements, as well as plantations on cemeteries (columbaria).

Plantband – a flower bedding of a garden parter.

Plants-edifiers – are species of plants that determine the structure and specific living conditions in the plant group.

Playing fountains – water devices with hidden mechanisms for unexpected pouring ("tree-raincoats") of visitors, and "water bodies", common in the eighteenth century.

Plots of moisturing – a group of habitats (types of forest lands) in edaphic grid of P.S. Pogrebnyak ditermined by soil moisture; hihrotops are arranged in a grid by high humidity increase down from the top and are marked with numbers from 0 to 5.

Plotting – a deep digging or plowing of the soil before laying the flower bed or planting trees.

Podzolic soil – soil of flushing water regime, which is formed under conifers and coniferous softwood forests during podzol formation combined with gleying and lessivage. The soil without humus horizon and with a strong podzolic horizon is called podzol.

Podzolization – the process of chemical changes of soil colloids and clay particles of acid soils in areas with a cool humid climate. It manifests itself in the release of iron oxides and aluminum, which together with bases and water accumulate in the deeper layers of the soil. This process usually takes place in forest and forest–steppe areas.

Poisons – commodity forms of pesticides, ready for practical application. They consist of active ingredient and additional ones, which increase the efficiency of the active ingredient and facilitate the application. Poisons can contain several active substances – solutions, concentrated emulsions, duets, wet powders, aerosol preparations etc.. Poisons contain, in addition to the active substance, various fillers that increase their effectiveness. The choice of the form of application depends on the physical and chemical properties of the active substance (solubility, aggregate state, stability, etc.) and the method of application (spraying, dusting, introduction into the soil or irrigation water, scattering, fumigation).The quality of poisons greatly depends on the technology of producing and the optimum selection of auxiliary substances.

Pollution – undesirable change in physical, chemical, biological characteristics of air, water, soil that can have unfavourable effects on a person's life, necessary plants and animals, production processes; to devastate, and spoil raw materials. There are the following types of pollution: biospheric, biotic, secondary, sonar, microbiological, mechanical, radioactive, light, thermal, chemical etc. Each type requires appropriate measures for its elimination.

Polygamous biogeocoenoses – are plant communities of the devastated landscapes: quarries, dumps, gravel and other embankments of railways, industrial and warehouse areas etc. As a rule, they are formed by ruderal plants, the emergence of which is associated with the presence in the dead breed of organic residues from previous ecosystems or brought by water or wind dead organic substances. These types of biogeocoenosis are one of the early successions, which leads to the inevitable restoration of the devastated landscape through a series of subsequent successions.

Pomologogenesis – there are orchards that are created as a part of agrarian farms with a production purpose, as well as the areas of large palace and park complexes, in which it is often possible to meet old fruit trees, which in the past formed a large garden area.

Pond – a natural or artificial component of the park landscape (river, stream, lake, fountain, cascade), which provides a decorative, hygienic (humidification, dust deposition), acoustic (loud noise or murmur) and optical effect (reflection of certain landscapes in the water).

Pool – flat artificial pond with clear geometric or landscape (scenic) contour designed to decorate the front of the object; pools can be decorative for sports, for bathing etc.

Population – is a collection of freely crossed individuals of a certain species, which for a long time exists on a certain part of the area relatively isolated from other communities of the same species. It is an elementary evolutionary unit. The ecological features of population are density, the distribution of individuals by age, the nature of the placement within an ecosystem or a group, the type of growth etc. In ecosystems, population can have positions of coenopopulation, a polycoenotic population, an invasive or regressive population.

Population and genetic monitoring – observation and assessment of the potential danger of changes in the genetic diversity of varieties and breeds; assessment of the influence of GMOs on the formation of agroecosystems.

Population density – is the average quantity of individuals (sometimes shoots) in the population per unit area or the average number of individuals per unit area of the studied biotope. It is not identical with the abundance, which is considered as the number of individuals per unit area.

Population density of the microdistrict – is the quantity of inhabitants living on 1 ha of the residential area of the neighbourhood.

Population eurybiont -is adaptive variability of ecological properties of populations, which is also reflected in their biological polymorphism. A greater variety of groups of individuals within a particular population, is the evidence of its broad plasticity, so it can better adapt to cyclic and sudden changes in environmental conditions.

Porch – is a cover supported by a colonnade or an open gallery. In gardening it is an open gallery in front of the building's facade, formed by columns, which carries the ceiling. It decorates the main entrance to the palace and organically links the interior of the building with the front yard.

Porosity – 1. Fine lace and embroidery in the form of a through drawing. 2. Netting made of thin metal strands of jewelry, artistic outpouring – a property that characterizes the density and the presence of gaps in the trees or entire plantations. The biological property of a tree; an important indicator for evaluating the effectiveness of agroforestry plantations.

Port – a small park building in the form of an open columnar pavilion, which was located mainly on elevated places or closed the prospect. Firstly it appeared in France in the second half of the XVII-th century.

Portable hedgerows – are designs involving plants that can be installed in any place and for a certain period of time . For their creation a special trench, is prepared as in the case of ordinary hedges. The bottom and one of the lateral walls of the trench, where plants are planted for hedgerows, are laid with bricks or a film to prevent the spread of the roots beyond its borders. The other side wall of the trench is laid by the board. The depth of the trench is 30 cm, the width at the bottom is 15 cm, and the soil level is 30 cm. The soil is intensively fertilized. Under such conditions, plants form a highly developed network of short roots, which fix well the soil and are located only in the trench. This allows you to dig up individual sections of the hedge (about 2 m in length) without any difficulty. During the excavation, each plant link is tied in the lower and middle parts to a pole of no less than 2.5 m long. The poles serve as a support in the process of digging, transferring and planting the fence.

Positive artificial selection – sorting planting material, the calibration of seeds, cutting of the formation on permanent forest seeds plots etc.

Potassium fertilizers – water–soluble minerals containing potassium. They are used as a source of potassium nutrition of plants. The raw material for their production is natural potash salts. Industry produces potash fertilizers, which, depending on the amount of active substance (K_2O) and method of manufacturing are divided into raw potash salts (kainit, sylvinite) and concentrated potash fertilizers (potassium chloride, 30-40 percent potassium salt, potassium sulphate, magnesium etc.). The potassium is readily available for plants compounds.

Potential area – the area environmental conditions of which meet the life–possibilities, tolerance of species.

Potential of the landscape – is the degree of possible participation of the landscape in satisfying the diverse needs of the society: economic, recreational, ecological, scientific , resource and others.

Potential soil fertility – is determined by the total stock of nutrients in the soil that can be used by plants in their life. It varies depending on the type of soils and their granular-metric composition. It is protected and preserved. Chornozem soils are common in Ukraine with one of the highest potential indicators of soil fertility (it occupies about 6% of the world's number and is the national wealth of the state).

Potential vegetation – vegetation, which is restored after the elimination of external factors (grazing, burning, cutting, recreation etc.).

Potted plants – plants that can grow and develop during long time in "indoor climate", which differs significantly from the environmental conditions of natural growth of plants. The decisive factor in growing room plants is the level of room illumination, especially in winter. When there is a lack of light, even if other favourable conditions are available, the plant quickly weakens and dies. Also, for certain tropical plants the optimum moisture levels must be maintained (by spraying) because in winter there is too dry air in the room, which can affect adversely the plants.

Potting soil – a soil mixture designed for use in container gardens and potted plants. Potting mixes should be loose, light, and sterile.

Prato – large meadows for walking with shady alleys, sometimes decorated with a pond. The first prato (in the present sense of the meadow park) was a large well-equipped meadow in 1309, located along with the medieval trade town of Siena, a city in Central Italy. This garden had not only to decorate the city, but also to become a place of recreation and entertainment for both citizens of towns and visitors. All this, as it turned out, has given a good push to a trade.

Pratocoenoses – crop –phytocoenoses, represented by groups of herbal vegetation: natural and cultural meadows, pastures, as well as various types of lawns, under which regular care is carried out.

Pre-design works – works that can be performed before the beginning of the design process to determine the principal volume spatial and urban design decisions. They are: the development of previous conceptual architectural proposals; the development of proposals for the placement of construction objects on land (the justification of location, the necessary territory and conditions of construction); processing the engineering characteristics of the object and compilation of questionnaires; drawing up a task for engineering research; drawing up tasks for designing; measurements and surveys of buildings, structures and small architectural forms that are subject to reconstruction, re–equipment, expansion, re–planning or superstructuring; historical-architectural, landscape assessment of the territory of the garden–park object, as well as other types of work necessary for the start of the design process .

Predominant tree breed – a wood species that forms the bulk of the wood stock or the area of forest protective plantations.

Pressing – a cultural practice, which is used in lawns creation. It consists in pressing of prepared soil by rollers with a mass of 150-200 kg for its condensing to prevent subsidence during walking on the surface of the lawn. Rolling the soil is conducted twice – before sowing seeds and after its rolling up.

Primary area – a territory or water area where any species appeared and from which then it settled.

Primary producers – are autotrophic organisms that can transform simple inorganic substances into organic compounds. These are green plants, algae, some microorganisms.

Primary vegetation – natural vegetation before the changes it has undergone.

Private gardens – (in Japan in the XVII-XVIII-th centuries) are small gardens that could be admired directly from the window of the house; the gardeners showed tremendous ingenuity to create extremely artistic compositions on a small area.

Production classification of pesticides. Depending on the goals and directions of the use the pesticides are divided into the following main groups: acaricides – for the suppression of plant–poisonous ticks; algicides – to kill algae and other weeds in ponds; antihelminths – against parasitic worms in animals; antiresistants – special additives reducing the resistance of insects to specific substances; preservatives for protecting wood and other nonmetallic materials from destruction by microorganisms; arboricides for killing undesirable tree and shrub vegetation; attractants – a common name for substances attracting insects; aphicides – preparations to combat aphids; bactericides – to control bacteria and bacterial diseases of plants; hametocides – substances that cause the sterility of weeds; herbicides – to control weeds; desiccants – for drying plants; defoliants – to remove leaves; zoocides or rodenticides – for rodent control; insecticides – to control pests; limacides or molluscocides – to deal with a variety of mollusks, including gastropods; larvicides – to kill the larvae and caterpillar insects; nematocides – to deal with round worms (nematodes); ovicides – chemicals that kill the embryos in insects eggs; growth regulators – substances that influence the plant growth and development; repellents – for insect repellence; synergists – additives that cause amplification of action of insecticides; fumigants – chemicals used in vapour or gaseous form to destroy pests and pathogens of plants; fungicides – to combat fungal diseases of plants and various fungi.

Profile of the locality – is the vertical cross section of the terrain. To construct a profile on a topographic map, a straight line is drawn, which is then transferred to a separate sheet of paper with the preservation of the scale and the points of intersection of the straight lines are marked on it, as well as characteristic points of the relief. The line thus constructed is called the basis of the profile. At all marked points perpendicular to the base of the profile, the heights of the points are indicated. The received points are connected by a smooth line.

Projection of the crown – is the image of the spatial figure of a tree crown or bush on the surface of the earth, which for a single tree is expressed through its largest diameter, and in plantations – as the sum of projections of the crown, regarding the mutual overlapping. The closeness of crowns to the tree species affects the species composition and density of grass and shrubbery tiers, their viability, and the duration of the comfort zone of recreation. The sum of projections of crowns sometimes is used to approximate estimates of the relative completeness of plantations, in the classifications of types of forest park landscapes, the establishment of the coefficient of competition crowns. The projection area of the crown depends on the species of the tree breeds, the conditions of growth, the age of the trees.

Projective cover of the aboveground cover – is the ratio of the area occupied by a definite species or the group of plant species to the total area of the plot (in %), which determines the projective coverage of the grassland surface cover.

Projective covering – is an analytical indicator that reflects the part occupied by the projection of plants in phytocoenosis, in relation to its entire surface, that is, the projective covering is a horizontal projection of above–ground organs of plants over the surface of the soil.

Promenade – is a place for walks, a walk alley in public and resort parks; it is widespread from the end of the nineteenth century.

Promotion to natural regeneration – is the creation of favourable conditions for seed germination, the emergence of self-seeding and the growth of undergrowth under the canopy of plantations due to mineralization of the soil surface in previous seed years and the removal of inferior vegetation, which prevents from the normal growth of self-seeding and undergrowth.

Proportion – a certain ratio, the proportionality of individual parts, objects and phenomena among themselves; it is taken into account in the design of plant selection, their size, the location of groups, curtains, massifs and their correlation with lawns, and the determination of the sizes of flower decorations.

Protection of water and water objects – a system of measures (administrative, technological, normative, legal, sanitary-hygienic) for the conservation and reproduction of water and water objects that are protected from pollution, shallowing and actions that can worsen the water supply, cause damage to people's health, reduce fish stocks, deteriorate living conditions of wild animals, reduce the fertility of lands etc. According to the Water Code of Ukraine, it is prohibited to throw industrial, domestic, radioactive and other wastes and garbage in water objects. The pollution of the surface of catchment areas, ice cover, coastal zones of all water objects, as well as seas, their bays and estuaries is prohibited.

Protective forest plantations (of special purpose) – are provided in the form of strips and arrays in buffer zones between residential and industrial areas and along high speed ways and highways, on the borders of residential areas; they play the role of protection against noise, harmful emissions, snow drifts, adverse winds, soil erosion etc.

Protective zone – adjoining the park or other garden–park object territory, designed to create a supportive environment and protect it from the negative effects of urbanized environment.

Public garden – green plantations on the square or in the street, which play an architectural and decorative role and are used for short–term rest. Depending on the functional purpose, they are divided into the most typical groups: for quiet rest and walks (recreational), memorial, historical and architectural, musical, for entertainment, for exhibitions (flowers, sculptures), decorative (without rest), informative (with alleys and without alleys), separating, for playing (children, youth). The first public parks were locked arranged platforms, located inside the residential building, and appeared in the XVII-th century in London. Later they became distributed as green areas for rest. In future, the function of the squares expands – they are intended not only for short-term rest of people, but also for the artistic design of architectural ensembles, monuments, residential neighbourhoods, public buildings.

Public garden in the street – **it adjoins** by one or two sides to the street, forming a kind of " a pocket". It is planted with green plants with a view to form the street and architecture of residential and public buildings. Such public gardens for functional purposes can be divided into recreational, transport-recreational, decorative, and by type of planning – into landscape, regular and mixed ones. The public gardens of this type occupy a significant territory in cities.

Public gardens – in ancient Greece and Rome they were arranged in public buildings – theaters, stadiums; gardens with springs and pools had alley ways and were decorated with ordinary tree plantations, covered galleries with niches for rest. According to the will of Caesar (58-44 B.C.), the great possessions of Pompeii were transferred to the property of the people.

Public gardens on the square – architectural and decorative compositions that meet aesthetic requirements and perform numerous utilitarian functions: they serve as a place for short-term rest, routing of transit pedestrians. Monuments, kiosks, advertising stands etc. are often installed on them. The public garden, located on the square, may occupy all or a part of its territory, may be integral or distributed to several sites.

Public welfare in settlements – works on engineering protection, clearing, drainage and landscaping territory, as well as socio-economic, organizational, legal and environmental measures for improving the microclimate, sanitation, noise reduction etc., that is conducted in the settlements for the purpose of its rational use, proper maintenance and security, the creation of conditions for the protection and restoration of human supportive environment. The objects of public welfare include: 1) public territory: park (water parks, meadow parks, recreation parks, parks–monuments of landscape art, sports parks, children's parks, historical, national, memorial parks and others), recreational areas, gardens, parks and playgrounds; monuments of cultural and historical heritage; streets, squares, boulevards, avenues; roads, driveways, pedestrian and bicycle paths; cemeteries, etc.; other areas of public use; 2) the local areas near the house; 3) the areas of buildings and facilities of engineering protection of territories; 4) the territory of enterprises, institutions and organizations and assigned to them territories by a contract. To the objects of public services and amenities other areas within the settlement belong.

Q

Quarter (compartment) –1) an element of landscape composition with flower beds, pergola, sculpture, separated part of the park; 2) a part of the forest park, bounded by cuttings; 3) a part of housing micro-district, a group of dwelling houses.

Quarterly gardens – in residential complexes they are landscaped areas located within a radius of not more than 500 m from residential buildings with an area of at least 1 hectare, intended for spending daily leisure time at the place of residence. There is a tendency to organize gardens of sports specialization. On their territory, the conditions for physical exercises and sports, sports games, training sessions should be created.

R

Radial processes – processes passing in the biosphere in the vertical or close to the vertical, relatively to the earth's surface, direction.

Radiation balance – is the sum of radiation fluxes that are absorbed and emitted by the system. Radiation balance of the earth's surface (the underlying surface, the active layer) is the difference between the absorbed total radiation and the effective radiation of the earth's surface. This balance can be positive or negative and has a daily and monthly progress. In the course of the day, the transition from positive to negative values is observed at the Sun's height of 10-15 degrees. Its monthly values (sums) vary widely. Annual amounts depend essentially on the latitude of the place: the highest positive values are in the tropics, and the negative values are observed in the Antarctica and in the Arctic.

Radiation balance – the difference between the intake (absorption) and expenditure (emission and reflection) of radiant energy per unit time on a unit surface (it is measured in cal./cm^2/HR or kcal/cm^2/month).

Radioactive degradation of soils – contamination of lands by radio nuclides, which occurs mainly in Polissya. At this time, long-lived radio nuclides remain: Cs_{137} with a half–life of 28 years and Sr_{90}, with a period of half decomposition in 300 years. The criterion for radioactive contamination of the territory is the radiation background (CI /km^2).

Ramp – is a park structure that has the appearance of an inclined plane (slope is 10-12^o), it replaces the stairs and is intended for the transition or transfer from one terrace to another.

Rate of green landscaping – is an indicator, which is characterized by the area of green areas (in m^2) per inhabitant. According to the existing norms, with a population of more than 500 thousand people the rate is 130 hectares / thousands of people; 100–500 thousands of people – 110 ha/ths. of people; 50–100 thousands of people – 90 ha / thousands of people; 10-50 thousands of people – 70 ha/thousands of people; less than 10 thousands of people – 50 hectares / thousands of people.

Rate of recreational loading – the degree of direct influence of guests on natural complexes. Recreational load depends on the number of objects of recreation, their size and location in the planning structure of the city. The permissible recreational load is 50-100 people / ha – for urban parks and gardens; 5-10 persons / ha – for forest parks; 1-5 persons / ha – for recreational forests. In case of exceeding the rates of the recreational load, measures of a planning nature should be carried out.

Reacclamatizaon – the restoration of a certain species of plants in a biocoenosis that had existed before, but was destroyed.

Reclamation – is a complex of engineering, mining, meliorative, biological, sanitary and hygienic and other measures aimed at restoring the productivity of the areas affected by the industry and turning them to various types of economic use. It includes works on green lanscaping and afforestation of infertile soils, dumps and heaps, mines, places of open development aimed at preventing wind and water erosion phenomena, the organization of recreation and living conditions of the population, in some cases new agricultural lands, hunting and forestry farms, etc.

Reclamation of landscapes – is a complex of engineering, land reclamation and other measures for the restoration of economic, ecological, medical and biological as well as aesthetic value of destroyed landscapes. It includes technical (preparation of land for further target economic use) and biological (soil fertility restoration) stages.

Reclamation of the combined direction – is the combination of two or more directions (for example, forest and water management with recreational reclamation).

Reclamation of the sanitary-hygienic direction – is carried out in all zones, mainly near the settlements and industrial enterprises, where the necessity of biological or technical conservation of destroyed lands exists. The destroyed lands have a negative impact on the environment or reclamation of which is ineffective for their use in the national economy.

Reconstruction of the object – a radical reconstruction of the park in order to improve its image in accordance with modern requirements for the organization of parks, park compositions, functional direction and it should be carried out with the use of modern achievements in science and technology, aimed at reproducing the modern image, idea, style of the monument park ; it should include the careful and consistent study of the old park, the use of new planning techniques that complete the stored elements of the composition. In practice the most widespread is the partial or complete reconstruction of green plantations with the preservation of functional content, planning basis and external improvement of the park, which is carried out in those cases where the functional direction of the park, zoning and zones content, architectural and planning organization, the elements of accomplishment and other artificial components of the park environment satisfy all requirements of visitors and requests of the city.

Reconstructive felling in parks – it is conducted in order to recreate and preserve the natural way of park space in accordance with the soil–climatic conditions, creating optimum conditions for the growth and development of plantations. The following types of reconstructive cuttings are distinguished: cuttings of care–forming, planning and sanitary ones.

Recreation – rest, restoration of human forces used in the process of labour. In this sense, the term is used from the 60-th of the twentieth century. Recreation is characterized by the amount of time within which there is a recovery of forces, and activity consciously or instinctively focused on this recovery. According to the structure of recreational resources (city gardens and parks, squares and boulevards, embankments, country parks, forest parks and national parks, recreation areas), as well as recreational activity of people, the recreation of inhabitants of large cities is divided into inland and suburban areas. Both have zones of close, medium and distant recreation .

Recreation area – a functional area of a park, forest park which are organized and equipped for organizing mass recreation. The location of recreation areas is associated with asphalt roads, main entrance, institutions of rest, the coastal area along streams, rivers, seas etc.

Recreation capacity – the level of recreational and environmental management, which indicates the possibility of implementing recreational activities of a population in a particular area without degradation of the natural environment and anthropocentric complexes. It reflects the ability of attractive recreational area for the preservation and restoration of its properties on condition of standardized environmental management. Artificial forest plantations on the various elements of landscapes significantly increase their recreational potential and are predominantly objects of recreation, particularly in treeless regions.

Recreation degression – the change of vegetation or natural systems as a result of their intensive use for recreation. It causes the degression of composition, structure and functioning of an ecosystem through trampling, soil compaction, destruction of plants, animals.

Recreation reclamation – the creation of conditions on the affected lands to restore the recreational potential of landscapes by constructing recreation and tourism objects: sports grounds, parks, recreation areas. It is carried out mostly near large population centers, combined with water management reclamation.

Recreational area – a specially designated area in the suburbs, in the city, designed for rest, recovery and health; parks and gardens, as well as buffer zones of monument parks can serve for recreational purposes.

Recreational capacity of area unit – is the maximum(regarding the types of rest) quantity of people who can simultaneously use this unit of recreation area without causing degradation of ecosystems and without introducing psychological discomfort.

Recreational forest use – is a set of phenomena that arise from the exploitation of the forest for the purpose of tourism and recreation. Its essence lies in the two–way connection of the influence of the forest on visitors and visitors on the forest, with the influence of the forest – passive, and visitors – active. The object of recreational forest use is forest massifs, representing certain landscapes, biogeocoenoses as a combination of flora and fauna with relief, climate, soil and water. The combination of forest with rivers, lakes, lawns, meadows, and rocky roads, which are a part of the total forest area, is particularly attractive for tourists and recreation, although forest areas suffer significant recreational loading.

Recreational landscape – a kind of functional landscape, formed on the basis of natural or artificial landscape for its using to recreate the population. It is a interconnected complex of vegetation, relief, soil, water and engineering as well as architectural structures, designed to provide the person with certain sanitary conditions, create favourable conditions for a certain type of rest and cause the same type of emotional reaction by their aesthetic qualities. Recreational landscape can be a forest, a meadow, a mountain, water and steppe.

Recreational resources – are objects and territories of natural or anthropogenic origin, which can be used for recreation, tourism and sanatorium–resort treatment: areas with comfortable beaches, clean waters, dry forests, bays, groves. They are mainly distinguished by relatively high aesthetic and microclimatic qualities, sometimes include cultural–historical, architectural elements, and special medical factors. Recreational resources include the material and technical means of providing recreation (roads, camp sites, engineering networks etc.).

Recreational routes – are created with the aim of protecting and regulating the recreational load of natural complexes. According to the functional features, they can be divided into health–improving (they contribute to the prevention of diseases, the decrease of nervous and physical tiredness), tourist (connected with trips and hikes for the purpose of active rest and knowledge of nature), sports, cognitive (they develop and enrich the person with knowledge about nature) , educational and environmental.

Recurrence – is an indicator of the uniform distribution of individuals by the area throughout the territory or on separate areas of the same size. It is characterized by the frequency of finding specimens on trial sites as a percentage of the number of sites studied. The size of the site can range from a few cm^2 (for the account of microorganisms) and several dozen dm^2 (for the account of herbaceous plants and invertebrates) to dozens of km^2 (for the determination of large vertebrates).

Recycling of biogenic elements – is the repeated or many times use of the main nutrient elements (mainly phosphorus and potassium) within the agro–ecosystem (agrolandscape) due to the maximum abandonment of the by–products of crop production at the place of cultivation. It is the mandatory condition of biologization and ecologization of modern agriculture. Recycling of biogenic elements first of all, improves the balance of humus in the soil with minimum expenditures.

Red line – a line of division and limitation of building and street (square), park and highways; it has an important regulatory value.

Reducents – 1) organisms that transform complex organic matter into simple inorganic compounds that can be absorbed by other organisms; 2) organisms, mainly microorganisms, which decompose plant and animal remnants to the level of inorganic substances.

Regenerative cost of green plantations – the cost of individual or combined woody plants, which determines their value, including expenditures for regenaration.

Regenerative pruning – a type of trimming with the purpose of obtaining a permanent young shoots on the tree or bush; it is also used to maintain intensive flowering.

Regional landscape parks – are created with a recreational purpose for unloading national natural parks from anthropogenic loading. Typical landscape complexes for a particular region are selected for them, which are characterized by favourable climatic conditions, natural attraction and aesthetic values, and in which the results of the current economic impact of man – building, the use of natural resources and other cultural activities – are coordinated with the natural environment. The economic activity is not excluded on the territory of the regional landscape parks, but its forms must not violate the natural landscape values and their recreational significance. Some interesting in the scientific and natural sense area on the territory of the regional landscape parks are protected as natural monuments.

Regional planning – is a proposal for planning the organization of the territory of the economic or administrative regions of the country. Regional planning is based on a wide range of social, economic, sanitary and urban planning activities and is carried out in natural conditions.

Regressive changes – changes leading to simplification of grouping, biocoenosis.

Regular style (regular planning) – a mode used in garden art that originated in antiquity in the gardens of Persia, Babylon, ancient Egypt etc. It was used to create garden and park objects in ancient Greece and the Roman Empire**.** It was widespread in the gardens of Italy, France, Spain and Ukraine. It is characterized by using the correct geometric contours, straight lines of roads, the symmetry of the composition, the presence of sculptures, water reservoirs.

Regular type of garden and park landscape – is characterized by regular planning, the presence of various architectural structures (palace, pergolas, retaining walls, stairs etc.), water reservoirs having a geometric shape (pools, fountains, cascades etc.) and sculptures; cultivars, which have a clear geometric shape of the crown (pyramidal, spherical, weeping etc.). In the regular type of garden and park landscape, parterres, flower beds, curbs, alleys and rows, various figures etc. with the help of the topiar art are created from vegetation material.

Regulation of landscapes – measures aimed at supporting the operation of landscapes in a given by a person or natural regime.

Rehabilitation of polluted territories – carrying out a complex of measures aimed at restoring the disturbed changes in the radiological situation of production, economic, socio–psychological and other relations and allowing unrestricted economic activities. Complete rehabilitation of polluted territories is understood as the so-called process of ensuring safe living and working conditions of a person in the polluted area with the certainty that these conditions do not differ from the conditions on any other territory of the country.

Reintroduction – is the reintroduction into the flora of a certain area plants that grew here earlier, but later disappeared as a result of natural or anthropogenic factors.

Rejuvenation of shrubs – cutting old by age above-ground part of the shrubs to replace them with young generations of vegetative origin (sprouts from the stumps).

Relative humidity – the ratio of existing water vapour to the maximum possibility of its quantity under given temperature and atmospheric pressure. Agroforestry plantations affect the increase of humidity of the surface air layer due to the positive change in the hydrothermal regime of the territories of deployment and beyond. Thus more favourable conditions for flora and fauna are created on forest meliorated territories.

Relative recurrence – the ratio of the index of recurrence of this species to the amount of recurrence of all plant species of phytocoenosis.

Relief – a set of forms of the earth's surface, different in shape, size, origin, age and history of development. It has positive (curved) and negative (concave) forms. The relief is formed under the influence of endogenous (tectonic movements) and exogenous (water, wind, etc.) forces. According to the scale there are: macrorelief, mesorelief, nanorelief.

Relief of land – is a set of diverse forms and genesis of the inequalities of the earth's surface within the land.

Relief of sandy soils – checteristic for certain areas the distribution of the surface of the sands under the influence of natural and man-made processes. The macrorelief is formed in long–term geological periods and forms plain territories and terraces; mesorelief – horns, hollows, pyramidal dunes etc, microrelief – shrub formations of elevations of sand, crust.

Relief–forming processes – the relief forms under their action. There are endogenous and exogenous types.

Remote monitoring – is a research system based on the use of aerospace information to assess, monitor and control the status of an object or a group of objects in connection with the action of a particular factor or a group of factors.

Renaissance – a general cultural and social movement for the restoration of culture, art, and literature of the Greece-Roman era after their decline in the Middle Ages. The Renaissance was accompanied by new discoveries and inventions, the emergence of new literary and artistic works, including in garden and park art. The main features of the Italian gardens of the Renaissance are their strict observance of regularity, the slopes terracing, on which the house and the garden around it (the so–called "terrace gardens") were situated, the use of a large number of decorative elements – sculptures, water structures, compositions of forming plants, etc. This style was further developed in the Baroque era.

Renaturalization – is elimination of the negative effects of human activities by means of engineering. Particularly, the restoration of the former riverbeds, the elimination of floods banks near riverbeds and the elimination of irrigation, drained systems. Renaturalization is one of the types of ecological conversion.

Rendomisation – is an unsystematic, the random placement of experiment variants in repetitions.

Representativeness of data – the ability of experimental data (quantitative characteristics, figures) of field observations, trials, samples obtained in the analysis of the natural environment, ecosystem, etc. to be objective criteria of the truth of observed phenomena.

Requirements to the soil fertility – a biological property of the agroforestry species as to the soil fertility while creating protective forest plantations. There are (according to P.S. Pogrebnjak): oligotroph (from the Greek. olígos – small and trophe-food) – it is unpretentious to soil fertility: juniper, mountain pine and common birch, black pine; mesotroph (from the Greek. Mesos-average) – aspen, white pine, larch, ash, red oak, common oak; megatroph (from the Greek. mega–

huge) – require rich soil – Norway maple, hornbeam, beech, fir, poplar, white willow, elm, walnut.

Reserve – a large area of natural territiry (water area), with a special type of protected mode, providing its complete removal from the sphere of human activities; the lands are transferred to the reserves for a long–term use**.** The main functions of reserves are the preservation of standard or most typical for this geographical area natural sites with the totality of components that make it up; diverse observations of natural processes and phenomena; conservation, restoration and reproduction of particularly valuable natural resources or features of flora and fauna; the development of the reconstruction of the flora and fauna and a lot of other environmental problems; educational and propaganda work and etc. There are complete, experimental, of target regime, biospheric, natural, national and international. The term "reserve" is also used for historical–architectural and memorial sites that are protected.

Residential area – is an area where residential buildings, other general–purpose buildings, as well as communal and industrial objects that are environmentally safe and which do not require the allocation of sanitary protection zones, are located; the presence of intra-city routes, streets, squares, parks, gardens, boulevards, etc.

Residential area of the settlement – is the territory of the settlement, which represents the unity of the material-spatial environment and processes of vital activity of the population, which occur within its borders. Planning organization of the residential area provides the rational accommodation of residential buildings, institutions and enterprises of cultural and domestic purposes, public centers (administrative, scientific, educational, medical etc.), street network and green spaces for general use in order to create the best living conditions of the population and the formation of a distinct, the architectural appearance of the city. The main sanitary requirement is the placement of a residential zone on the windward side and above the river's course in relation to industrial and agricultural enterprises that pollute the environment, as well as the creation of appropriate sanitary protection zones.

Residential district – 1) is the site in groups of houses or courtyards, which combine multi–residential buildings (4-5) and form a plot with an area of 0.8-2.5 ha. The land between two or three buildings, the area of which does not exceed 0,5-0,7 hectares, is mainly called a planted courtyard. For the garden, one should choose the most suitable by the natural state lands with severe topography, large specimens of trees, ponds; 2) a set of residential quarters, which include administrative buildings, and ones of cultural, educational and community character. One of the main places in a residential area is a highway of city value, which connects it with other parts of the city, the streets and squares of regional significance. All of these elements include green plantations, which creates a set system of its landscaping, including the following elements: a district Park; landscaping highways and streets of citywide and regional importance (boulevards, protective and decorative plantations); green landscaping of center area (squares and some public institutions with green plantations); protective zone separating the residential area from the industrial, railways and other residential districts etc. The composition of the neighbourhood and green quarter mainly includes: a garden, plantations in areas near some residential buildings or groups of buildings, protective plantations on the border of the district, along driveways and around inter-district economic and auxiliary buildings.

Resistance of plants – is ability of plants to withstand the impact of certain adverse environmental conditions. There are winter, frost, ice, heat, drought, salt resistance, resistance to certain diseases, etc.

Resistance of plants – the ability of the plant to withstand the action of extreme environmental factors (soil salinity, air or soil drought, low or high temperatures, etc.). To a large extent, the resistance of plants is determined by the anatomical-morphological and physiological as well as biochemical features of plants that have been developed and genetically fixed in the process of evolutionary development. The levels of plants resistance of one species or variety to the effect of various factors often do not coincide. Xerophytes and xerophils are the most adapted to the drought of soils and air, and halophytes –to salinity. The impatience or resistance of plants to diseases and pests is called – plant immunity.

Resort – the area having natural curative properties, mineral springs, and deposits of therapeutic muds, favourable for the treatment and prevention of diseases by climate and other conditions.

Resort parks – garden and park facilities designed to provide treatment and recreation activities of temporary or permanent living people **in at the resort population; hospitals, resort rooms, sports facilities and beaches are placed in** general resort parks.

Resources – substances or objects necessary for the organism to maintain normal existence, growth and reproduction; any source for obtaining the material and spiritual wealth necessary for people, which can be realized by technological and socio–economic relations.

Resources of the natural environment – is a resource group, which includes ecological resources that directly affect humanity and are the objects of its economic activity.

Restoration – the use of radical methods of changing the elements of the landscape in order to obtain the finished compositions characteristic of a certain period of park development .

Reverse environment changes – components change of the environment having the character of slight fluctuations with the restoration of the previous conditions.

Rhizomatous grasses are reproduced vegetatively. These cereals form new vertical shoots in 1–5 internodes on underground rhizome, so they do not form dense turf, between the vertical shoots the soil is visible**.** The first roots of the young grass lay in the soil at depth, where the porosity and friability of the soil ensure its vital functions. A new generation is formed above the old, so with the age grass rhizomes higher and higher are from the soil surface.

Rhizomatous type – grass tillering of grasses, peculiar for cereals, in which the tillering node is not located deep under the soil. They develop vertical shoots that grow upward and form on the soil surface grass stands of average density. Underground stems (rhizomes) grow at first horizontally under the soil, forming several underground nodes (3-5), where on the arc of shortened nodes underground shoots with an independent root system and tillering zone develop.

Rhizomatous-shrub lawn forming cereals – cereals that during tillering form short, but numerous rhizomes with shoots that create more or less dense bushes. The system of shrubs is formed, which are connected by short rhizomes. Tillering zone is located below the surface soil (5-8 cm), which forms a dense network of roots. Plants make up a system of rosette shoots connected by rhizomes. These grasses form a smooth, elastic and firm turf, which is desirable when constructing high-quality lawns. Cereals of this type are the most valuable for arranging sports and quality ornamental lawns, as formed turf is dense, elastic and not brittle. It does not break when the athletes run and does not form bumps while trampling.

Rhythm – flow forms in time. Rhythm regulates spatial–temporal variations of forms. The special view of landscape is provided by the seasonal rhythm of landscape development: spring–summer–autumn–winter. Rhythm is also created by individual elements of landscape picture that alternate in a certain sequence: trees and shrubs in an alley plantations, lamps, sculptures etc. in a common alley that are perceived by a pedestrian in the course of his or her movement.

Rhythm of phytocoenoses – the changes occurring in phytocoenoses due to changes in environmental regimes in age annual and daily cycles.

Rhythm of vital activity of organisms – the cyclic vibrations of vital functions of organisms associated with cyclic rhythms in the external environment. There is a daily rhythm caused by the change of day and night, and the annual, associated with cycles of solar activity.

Ridge – a flower garden in the form of a narrow strip with the width from 1 to 2-2.5 m and the length from 3 to 25 m. Planting annual and perennial herb plants is carried out in the right rows with a slope in one direction or with the selection of plants on both sides. In the latter case, higher plants are in the middle, and the low-growing plants are on the edges.

Rockarium – is a garden or a part of a park area where ornamental plants are combined with a stone. The size and quantity of stones are chosen according to the size of the plot and they are associated with the surrounding vegetation, small architectural forms, water reservoirs, etc. When grouping stones, they care about creating a volumetric composition. Each group of stones in its composition must be individual, that is to say, differ in size, plane ratio, colour etc.

Rococo – is a style that was developed in the European plastic art of the first half of the XVIII-th century. It appeared in France during the crisis of absolutism. This style is characterized by the lack of ideological content, but promotes miraculous ornaments, fictitious ornaments, asymmetry, the complexity of wavy lines, etc.

Romanticism – is a style of garden art that arose in Europe at the end of the 18-th century. The landscape parks of that time were full of romantic ruins, gravestones, mausoleums. The theme of returning to rural life is reflected in the pastoral motives of rural houses, wind and water mills. In memory of heroic feats columns, obelisks were set, and pavilions were erected in ancient, Chinese, Turkish and other styles. The park landscape was to convey a sad melancholic mood or depict an idyll of rural life. It was built on a contrasting change of impressions, where dark groves, artificial caves and grottoes were changed by lawns and valleys.

Rooms –the interior courtyard gardens, allocated from the bosquets, which resembled the inner halls of the Palace. The large gardens could have such several rooms, which were not similar to each other by size, spatial arrangements and decorations. They were divided into single and ones containing many parts: the first ones, the simplest in structure, were placed in geometric shapes of square, circle, rectangle, or octagon with multiple entrance paths and paths for walking and installing benches. The walls of the hall were created by cut wallpaper, trellis etc., the second type – in the large area lawns and consisted of several parts, joined together by pathways.

Root shoots – are shoots grown from the additional buds, which are laid at the root. Root shoots are formed in large quantity when the above-ground part is weakened, and the root system is powerful. At the same time, plants that normally form a significant number of rootstocks (poplar, willow, black locust, raspberries, blackberries, cherries, plums and others) are called root shoot plants.

Rotonda – rounded construction, which is mostly completed by a dome. On the perimeter of the rotunda columns are often placed. In the form of a rotunda, some ancient Roman temples (for example, the Pantheon) and mausoleums, baptistery, separate Christian churches (mainly Romanesque, Renaissance etc.), halls from the XVIII-th century park pavilions and pergolas were built.

Rosary - a landscape composition consisting only of roses. For example, in England there is the Bikton Park Gardens - a garden of the early 18th century. It features elements of an Italian garden, a geometric basin, a parterre, terraces, then an American one, colourful thickets of trees and shrubs, moisture-loving plants, like a host and a primrose. The Mediterranean part of the garden is planted with drought-resistant plants. Fern greenhouse – is almost a primitive rocky glade, created in the early Victorian era, at the time of universal fascination with ferns.

Row planting – is created only by trees, or only by shrubs. Combined, tiered plantations are allowed (from trees and shrubs). In row plantations plants are planted in one, two or more rows. Trees are selected with an equal, direct trunk and correct crown. The most common row plantations are alleys and hedges.

Ruderal plants are plants that grow on dumps, dust-heaps, waste lands, over roads and in various clogged areas(e.g. nettles, black-eyed peas, and others).

Ruins – are the element of the design of the park landscape of the romantic parks of the eighteenth century, which had the view of man-made ruins of ancient temples and tombs. Such element (pictured) can be seen in Stryi Park (Lviv city).

S

Sacred groves – buildings connected with religious cults. They were dedicated to the heroes of Ancient Greece and looked predominantly like memorial objects.

They are forested areas with springs, sculptures and architectural buildings. Somewhat later sports competitions were arranged there, and later they turned into sports parks, equipped with paths, playgrounds and racetracks.

Saline plants – are plants that grow on saline soils. They delay significant drying and compaction of the root-containing layer and increase the content of water–soluble salts in the soil.

Saline working out (desalinization) – is the process of changing the composition of absorbed cations and the properties of saline soils, which occurs naturally or is caused by meliorative measures. It reduces the content of exchangeable sodium and improves the water-physical and other properties of the saline horizons. The main reclamation measures of saline working out are the introduction of gypsum and the removal of easily soluble salts by soil washing.

Salt regime – is a dynamics of the composition of chemical transformations and migration of salts in soils and water reservoirs. It is an important environmental factor.

Salt resistance – is the ability of trees and shrubs to withstand soil salinity – the basis for a long time without significant signs of violation of their physiological state and viability. By the level of salt tolerance, woody breeds and shrubs are divided into five classes (according to O.S. Migunova): of very weak tolerance – walnut, Siberian larch, white willow; weak-tolerant – Crimean pine, Virgin juniper, aspen, black poplar etc.; salt tolerant – ordinary oak, field maple , Tartar maple, black locust, gleditsia triacanthos; the most salt-tolerant – elongated mulberry, currant golden etc.; salt resistant – tamarix (salt cedar).

Salt marsh vegetation – is vegetation of saline soils belonging to different families . For salt vegetation fleshy leaves, stems, high osmotic pressure are peculiar.

Salty soil – is a soil that is saturated with mineral salts, and sodium exchange accounts for 20% of absorption capacity. Salty soil is formed as a result of the influence of sources of readily soluble salts located closely to the soil surface or as a result of secondary salinization. They are located mainly in the steppe zone.

Sand scattering – the movement of loose sands under the influence of wind.

Sanding – is a way of improving water–physical properties of peat-bog soils by enriching them with mineral soil – sand. It is one of types of structural reclamation in soils. It increases bearing properties of soils, resistance to deflation, improves water regime.

Sanitary protection zone – an area around industrial enterprises, which includes a special system of green plantations in the form of belts of a particular design (filtering, isolating plantations) and open areas of the lawn. The width depends on the class of harmfulness of the enterprise (Class I – 1000 m, II – 500, III – 250, IV – 100, V – 50 m). Plantations contribute to the partial absorption of gaseous emissions, the precipitation and filtration of dust and aerosols, the removal of harmful substances in the upper atmosphere and out of residential construction .

Sanitary recreation felling – is a kind of reconstructive felling in parks, which are carried out in order to remove damaged, depressed, deadwood trees and shrubs that, as a result of reduced vital activity, are subjected to pest attacks or are struck by diseases, turning into potential sources of infection of healthy plantations. The affected deadwood trees or plantations are mostly non-curable and are removed.

Sanitary-hygienic function of green landscaping – is to purify the environment by absorbing carbon dioxide and extracting oxygen, as well as planting ability to reduce bacterial air pollution, to increase the ionization of the atmosphere (mainly coniferous plants), and to enrich it with various phytoncides.

Sanitary-protective area – a zone of vegetation that is specifically allocated between the industrial sites and the area of residence of the population in order to protect human health. Sanitary protective area must be planted with trees and shrubs and meet the special hygienic requirements.

Sapropel – a pond or lake mule – semi-decomposed remains of aquatic plants, animals and soil – organic-mineral fertilizers. It is used in the cultivation of flower crops both in pure form and in the composition of various compost. It is the most effective sapropel on poor sandy soils. The optimum dose is 60-80 t / ha at 50% of moisture.

Savannah – tropical and subequatorial groupings that are characterized by a combination of herbaceous cover with low–growing trees and drought–resistant shrubs. Naturally, savannas are formed in the conditions of the tropics, and artificially – in the vegetation decoration of the territory.

Scale – 1) a numerical indicator of the ratio of the line length on the plan or the working drawing to its real length (for example, S 1: 500 – 1 cm 5 m); 2) a graphic (linear) indicator, which depicts a line spacing corresponding to 5, 10, 20, 100 m etc. on the ground; 3) a spatial index, which reflects the size degree of architectural and natural forms, forming a garden–park composition, as well as the relevance of their value to its purpose, the environment, the person; it varies depending on the nature of the environment (park-monument, surrounded by multi-storeyed buildings).

Scale of abundance – a ball system of an estimate by sight of the abundance of a particular population. The well-known is the scale of O. Drude (1890), the 10–point scale by E. Rubel (1922), 4–ball by B. A. Keller (1936), 5–ball A.G. Tanley (1926), I. Braun-Blanquet (1928, 1951), H.C. Hanson (1930) and others.

Scale of quantity – the gradation of the number of individuals of plants or animals per unit area or volume (for plants – gradation of the number of individuals, clones, spots of rhizospheric plants, their individual parts). There are no generally accepted scales (there are many available options).

Skansen – is an open–air museum in which ethnographic sights from different regions of the country are collected; as a rule these are examples of buildings, monuments of folk wooden art, embroidery, household items. It appeared in Stockholm in 1891.

Scarification of the lawn –a complex treatment of the underground parts of the lawn, which includes, first of all, aeration and scarification.

Scenario – is the basis of the compositional construction of the park using architectural forms, sculptures, plant and water elements, planned in a certain sequence for the disclosure of composite paintings, creating mood and impressions; it is spread in the landscape gardens and parks of the XVIII-th century.

Scheme of city green landscaping – a drawing made on the basis of the city (settlement) general plan which reflects the principle nature of the location of objects of landscape architecture on the plan, depending on their purpose.

Scheme of mixing breeds – the order of placement of wood and shrub breeds of plants in the area of forest plantations that are created or examined during their cultivation.

Sculpture – a kind of fine art that reflects reality in generalized plastic shapes and volumetric–plastic forms, as well as works of this kind of art; it is divided into several types: monumental, decorative, applied etc. In garden art there is a decorative sculpture.

Sealing hollows – a method of treating old trees. Before laying a seal, the hollow is cleaned from rot to healthy timber, disinfected with creosote or 5% solution of copper sulfate. Small hollows can be filled with cement mortar, and large hollows are filled with pre–stained brick, over which, on the level with the surface of the barrel and in its shape, cement plaster is applied. Good material for sealing is wood chips, steamed in coal tar or asphalt. The prepared mass is used in a warm state. The outer surface of the seal is smoothed down by hot iron.

Secession – a new direction in architecture, fine arts and applied art, which appeared at the end of the nineteenth – the beginning of the XX-th centuries. Its ideologists – German and Austrian artists who opposed the officially recognized academicism – tended to rectilinear ornamentation, preserving the geometric essence even in the most complex compositions. The most prominent representative of this trend in architecture is Antonio Gaudi (1852–1926), an architect and sculptor from Barcelona.

Secondary factors – such factors, which are caused by the influence of plant organisms.

Secondary vegetation – vegetative groups occupying the clean area as a result of the destruction of primary, indigenous groups, mostly as a result of human activity. It is characterized by casual composition, the lack of secretion and mutual influence between plants.

Seed viability – is expressed as a percentage of the number of live seeds in seed material, regardless of whether the seeds are in a dormant period or not. The viability of weed seeds is their ability to be in a living state, it is expressed in a proportion of live seeds in its sample.

Segetal plants – are a significant group of plant species associated with the human husbandry culture, which are a compulsory component of agrophytocoenoses (sowings of agricultural crops, gardens etc.).

Self-liquidation – the result of self–regulation of population quantity depending on density, when due to competition, the corresponding number of individuals is selected for each version of the environment. In cultivated plants, self-liquidation is weakened, therefore, the density is regulated artificially – by the rate of seeding and crop rotation.

Semi-desert area (semi-desert) – is a natural area of temperate, subtropical and tropical zones with a predominance of landscapes of semi-deserts where areas with sparse vegetation dominate, in which grasses and Artemisia (in Eurasia), a group of perennial herbs and shrubs (on other continents) prevail.

Semiotic interaction – interaction in which there is a transfer of information from one organism to another.

Shadow–resistant breeds – woody and shrub breeds that can grow in shaded areas with insufficient sunlight, due to the natural adaptability to photosynthesis under dimmed (weak) lighting. They include linden, hornbeam, spruce, fir etc. They are used when complex multi-tiered plantations, especially for soil protection classes of plantations are created.

Shape of the slope – is the longitudinal profile of the slope from the foot to the watershed, which is important and has a significant effect on the manifestation of erosion processes. There are the following slopes: straight, convex**,** curved and stepped. On the straight and convex slopes, the danger of erosion increases from top to bottom, and on the convex–curved it is the largest in the upper convex part and the smallest is in the lower one.

Sheds – are lightweight structures for short-term recreation of visitors of a garden–park object and protection from the sun and rain; they are located in crowded places or near walkways, in places of public transport waiting.

Shoot – a stem with leaves and buds placed on it. The shoot ends with a top bud.

Shoot creeping – it creeps over the soil and roots at the nodes with additional roots. When the creeping stems have short internodes, they are called whips (barberry, violet bark etc.). Creeping stems with long internodes are called mustaches (strawberries). Creeping stems help plant move and spread in a certain area. With the help of creeping stems, plants propagate vegetatively.

Shrub – is a perennial plant with woody stems, but without a clearly defined main axis of the trunk, which branch at the surface of the soil and are used for planting forest protection shrubs**.** Their height is within 0.5-6 m, and they arose in the process of evolution of the plant world due to adaptation of growth in the lower tiers of forest phytocoenoses. They can exist independently in different conditions, even in those that do not withstand the tree forms. They are common from the dry steppe to subalpine altitudes in the mountains. From them the vital forms were separated – little shrubs (with the height of 0,5-50 cm) and perennial grass plants.

Stem (trunk, bole) – a part of a tree or shrub trunk, cleaned from branches and leaves from a root cervix to the first skeletal branch of a crown; trees can be formed with high (up to 2 m) and low (0,5-1,5 m) trunks: high–trunk trees are used in row plantations in streets, boulevards, park alleys; low ones are used as solitters (roses, buttercup, mountain ash) on lawns.

Sideration – the cultivation of soils by growing special herbs-siderates: alfalfa, lupine, peas, rape etc. to enhance the activity of soil microorganisms and the enrichment of soil with nutrients. The green mass of siderates is grown and plowed into the soil twice a year, after which potassium and phosphorus fertilizers are introduced, and only next spring, the soils become suitable for planting.

Sidewalk – is an element of a city highway or street; the road canvas is at least 2 m in width (the calculation is carried out by the formula: $A = 0{,}75n + 1{,}5$), where

A is the width of one belt occupied by a pedestrian walkway (0,75 m); N – the number of belts depending on the intensity of traffic (man-hour); 1.5 m – the reserve for the installation of benches or trash.

Silhouette – contour definition of ornamental plant groups on the background of the sky or urban development, perceived spatially from the outside or from the middle, but always in the distant plan. A park or a forest park without expressive silhouette is faceless and gloomy. Vertical accents and dominants help remember the image of the park, which distinguishes it from all others .

Silvacoenoses – plant groups, which are formed by analogy with the natural forest with its characteristic longitude and the ratio of trees – edificators, subedificators, assectators**.**

Similar organs – are those that have different origin but perform the same function, as a result of which they have similar appearance (e.g. thorns in hawthorn are modified stems, in barberry – leaves, in black locust – stipules etc.). All these organs perform the function of plant protection.

Simple landscape – a picture with one compositional node, limited by a horizontal angle of 28°C.

Sleeping bud – the normally formed, but undeveloped growth bud; it can sprout even in several years – as a result of trimming, freezing and other damage of branches.

Slope – is an indicator of the territory terrain, which characterizes the inclination of individual surfaces relatively to the horizon line; it is calculated as the ratio of the laying height (H) in this section to the laying length (L – distance between the horizontal lines, step); it is measured in percentages and absolute values.

Small architectural forms– in green landscaping – artificial architectural and volumetric elements of garden and park compositions, which are united by the general artistic design and carry out utilitarian and decorative functions. Small architectural forms are divided into four groups: artistic-decorative (sculptures, decorative vases, elements of monumental painting, compositions of stones etc.); of special purpose (they serve for the organization of attractions, exhibitions, lectures, conducting performances etc.); household (pergolas, covers, fountains for drinking water, pointers, lamps, information stands, etc.); auxiliary (bridges, retaining and decorative walls, terraces, buildings for the maintenance of animals and birds etc.)

Snow damage – trees or shrubs, in which the tops or trunks are broken under the influence of snow.

Snow–storm winds – they are common in winter and have a speed of over 5-10 m / s. Due to the large kinetic energy of wind currents, they can carry loose snow at considerable distances and form tents near wind-proof obstacles. When the dry loose snow is removed from the surface, there are gusts of snow (land). In the case of unregulated snow-gathering areas, preconditions for snow–capturing of objects of national economic infrastructure (settlements, roads, gardens, industrial and communal objects etc.) arise.

Socio–ecological and economic optimization – the transition to the most desirable from the person’s point of view state of the environment in the fields of economics, sociology.

Sod-carbonate soil – soil which is formed on carbonate rocks in the washing or periodically washing regime under coniferous and mixed forests.

Sodding – 1) establishing soil cover grass coenosis on the exposed surface (disturbed) of land, piles, levelled or terraced slopes; the methods and composition of sodding grass mixture is experimentally determined depending on the characteristics of their break–lands, properties of rocks that form them and their specific physical and geographical conditions; 2) the creation of lawn in areas where sowing seeds do not give the desired effect, or when the creation of lawn cover is necessary. Turf is harvested in the meadows or plots of cultural lawn, it is mainly cut by strips the width of which is 25-30 cm, the length is 50-60 cm . The turf is stored and shipped in stacks, putting pieces of turf grass to grass.

Sod-gley soil – soil which is formed on carbonate rocks or in the conditions of solid groundwater, on slightly drained surfaces or in depressions with seasonal waterlogging.

Sod–podzol soil– a soil that is formed under the conditions of water regime, it refers to the type of podzolic soils, but has a distinct humus horizon.

Soil – a natural formation, consisting of genetically related soil horizons that are formed by converting of the surface layer of the lithosphere under the influence of water, air and living organisms. The most important part of land resources, natural and anthropogenic landscapes, the producing layer of the earth's surface, independent natural and historic, organic-mineral formation, capable of self-development and self-healing, and maintenance of biogeocoenoses (biosphere) functioning. In the agricultural operation of the land the soil cover reflects the nature and properties of it as the means of production, the basics of agrophytocoenoses, the object of protection, and reproduction.

Soil assessment – comparative assessment of soil quality by natural fertility, which is determined by their natural properties, which are correlated with the yields of major crops at comparable levels of intensity of farming and agriculture. The soil assessment is updated agronomic grouping of soils when quality accounting by the natural fertility is expressed in points, when comparing their average long-term productivity of the main crops and natural forage lands – by the yield of the hay and green mass.

Soil climate – the long term heat, water and hydrological regime of the soil closely associated with climate, vegetation, relief, soil-forming rocks and other components of the landscape.

Soil cover – a set of herbaceous plants and semi-shrubs growing under the canopy of plantations of forest protective and vegetation fall, that has not rotten (fallen leaves, branches, fruits etc.)

Soil degradation – decline in fertility mainly caused by anthropogenic factors. Land degradation has its own peculiarities caused by different factors, which gives the possibility of their separation by dominant characteristics. There are mechanical, physical, chemical, physic-chemical and biological degradation.

Soil density – is the mass of absolutely dry soil in units of volume of immovable structure (g / cm^3). It depends on the granulometric composition, the nature of the minerals, the content of organic matter, the structure state etc..

Soil eluvium – the leached soil horizon depleted in colloids, humus and nutrients. It is formed in the upper horizons of soils as a result of a podzolic process under forest vegetation.

Soil fauna – a set of animals living in soils all their life or temporaryly at any stage of their individual growth.

Soil fertility – is the property of the soil to meet continuously the needs of plants throughout their life in water, the elements of ash nutrition and bound nitrogen. Fertility is the most important qualitative feature of the soil, which substantially differs it from the parent breed. There are potential (possible) fertility and effective, or real.

Soil fertility factors – they include content of nutrients, water, air and temperature regimes, physical conditions, the absence of substances harmful to plants. The socio-economic – contain factors that are caused by human economic activity.

Soil formation factors – are elements of the natural medium, under the influence of which the soils are formed. The idea about soil formation factors created by V.V. Dokuchaiev is a part of his theory of soils. He identified five soil formation factors – soil-forming rocks, living and dead organisms, climate, relief and age of the country. In modern soil science, the economic activity of a person is added to the aforementioned soil formation factors. It greatly contributes to soil transformation.

Soil humidity regime – is a combination of all quantitative and qualitative changes in soil moisture in time.

Soil liming– it is an agrotechnical method, which consists in introducing calcareous substances into the soil to reduce harmful for many plants excessive soil acidity. Liming increases the transfer of nutrients, especially phosphorus from inaccessible into digestible form. The applied lime increases the saturation of the soil and the content of calcium in the soil solution, resulting in the displacement of absorbed calcium hydrogen and aluminum from the soil. Changing absorbed hydrogen by calcium, and magnesium in many cases, soil colloids minimized, which improves soil physical properties, including the formation of small lumpy structure, resulting in increased permeability and the aeration of the soil.

Soil loosening – is a technological operation that provides the increase in the porosity of the soil due to the loose placement of soil particles. It is mainly used to improve air regime on recompacted heavy soils.

Soil macrofauna is a group of invertebrates larger than 2 mm in size, which pave the way during the active movement in the soil. It is represented, particularly, by the earthworms, polygons, snails, spiders, etc., and their larvae. These animals breathing occurs through the body surface or with the help of special organs. Under unfavourable conditions, they are able to migrate to deeper layers, where they withstand drought and winter cold. Soil macrofauna substantially affects the chemistry of the soil, the formation of humus, the structural properties, the biological activity and the fertility in general. Organisms that are a part of soil macrofauna, are used for soil condition diagnostics (zoodiagnostics).

Soil map – map showing on a plane a soil cover of the earth's surface in the proper scale .

Soil microflora – is a generalized notion of microorganisms of the pedosphere.

Soil of low forest suitability – soils of medium and high erodity, mainly in the steppe and forest–steppe zones, in which successful forest farming is possible only at carrying out actions for improvement of habitat conditions.

Soil organic matter – is the combination of humus, plants and animals remnants and products of their decomposition in the soil.

Soil physical-chemical degradation – it is caused by changes in reactions in the soil environment (acidification or alkalinisation), capacity of absorption, the quantitative and qualitative composition of absorbed bases.

Soil pH – basically, pH is a measure of the amount of lime (calcium) contained in your soil. A soil with a pH lower than 7.0 is an acid soil, a soil pH higher than 7.0 is alkaline soil. Soil pH can be tested with an inexpensive test kit.

Soil pollution – 1) the accumulation in the soil of substances which adversely affect their fertility and other useful properties in the soil; 2) the accumulation of chemical, mechanical and radioactive elements, compounds, pathogens, and other harmful substances in the soil in quantity which affects the properties and fertility of soils, worsens the quality of agricultural products or is a threat to public health.

Soil protection – is a system of measures (administrative, technological, normative, legal, sanitary and hygienic) for preservation and reproduction of the integrity and ecological and landscape functions of soil cover, biological productivity (fertility) of soils, their protection from pollution and degradation.

Soil structure – is the ability of the soil to decompose into separate lumps or aggregates when it is loosened under optimum humidity conditions.

Soil tillage system – is a set of separate soil tillage measures in the order of their implementation for the control of weeds and the creation of favourable conditions for the growth of cultivated plants.

Soil water regime – a set of phenomena and processes that determine the entry of moisture into the soil, its movement, the changes of the physical state and flow out from the soil; one of the major factors of soil formation and the increase of soil productivity. The elements of the water regime are: absorption, filtration, capillary rise, surface runoff, downward and lateral; physical evaporation, freezing, thawing, condensation.

Soil-reclamation survey – soil survey on the territory is designed for land reclamation.

Solar radiation – the radiation of the heat flux of sun rays on the earth's surface; it is measured in calories per unit of surface per time unit (cal. / cm^2 / min).There are direct, reflected and penetrating radiation .

Solitaire – a tree (shrub), located separately from a massif or a group of green plants, without merging with it, on the open area of the lawn. Trees for planting by solitaires are chosen in each individual case according to the landscape of the surrounding area, by height, thickness, crown shape, colour of leaves, flowers, fruits and other features. Its decorative character must be perfect in all respects: a highly developed crown with a great amount of leaves, a beautiful skeleton in a leafless state, abundant flowering and fruiting. As solitaries mainly light–loving plants are used. As to the form of the crown, the solitaires may be pyramidal, globular, with horizontally arranged tiered branches, etc., or they can have an artificially formed crown. Shrubs in solitary plantations are often cultivated in the standard form .

Spatial structure (morphology of phytocoenosis) – is the mutual arrangement of different elements of phytocoenosis – populations, certain individuals or their parts. The vertical and horizontal structures of phytocoenosis are considered.

Specialized parks, monofunctional parks – a type of parks designed to perform one particular function or a type of activity: exhibitions, sports, Olympic, historical, botanical, zoological, ethnographic etc.

Species variety – species diversity; an indicator that evaluates the number of species in one group in biocoenosis, the ecosystem, within the landscape.

Spontaneous phenomena – are characterized by the danger of manifestations and consequences for a man and his economic activity, the environment. There are space (solar activity, magnetic storms, meteorites falling etc.) geological (volcano eruption, earthquakes etc.), geomorphological (landslides, sediments etc.), climatic and hydrological (typhoons, sand-storms, storms, etc.), geochemical (pollution of the environment, salinity of pounds etc.), fires (forest, steppe, peat fires), biological (massive reproduction of agricultural pests, poisoning animals, epidemics), fires (forest, steppe, peat). The extreme degree of their manifestation is an ecological catastrophe.

Sports buildings – are buildings designed for competitions in various sports, training sessions in physical education and sports, as well as those used for active recreation and general physical training. According to its purpose, sports buildings are divided into: 1) demonstrative (for competitions in the presence of spectators); 2) educational and training; 3) buildings for active recreation. In free time demonstration buildings are used for training sessions and active recreation. Sports buildings include: 1) main buildings (designed directly for physical education and sports): a sports core, a pool for swimming, a field for hockey, a playground for volleyball etc.; 2) auxiliary structures (for serving people who train and operate a sports building); bathrooms, massage rooms, technical and administrative offices etc.; 3) a complex of buildings and rooms for spectators: wardrobes, buffets, toilets etc. The main sports buildings are divided into two types: separate (specialized) buildings – for occupations of one kind of sport or several if the equipment is replaced; complex buildings – for engaging in several sports in separate buildings located on the same territory or in one building .

Sports lawns – belong to the objects, the main requirement of which is the presence of turf, resistant to trampling and tearing. Lawns of this type are arranged on football fields, courts, playgrounds. Golf courses have become popular recently. The strength of the turf depends on the composition of the soil mixtures, the underlying rock, the drainage, as well as the species composition of herbs, the content of different types of herbs in grass mixtures. Sports lawns are designed for sports events, mass events, and celebrations. Such lawns carry an extremely high load on turf, so the requirements for their creation and operation are higher.

Sports park – a city or district territory, intended for active recreation of the population – physical education and sports, sports games, mass events. In such parks, it is expedient to allocate such functional zones as sports buildings and facilities (20-

28%), quiet rest (40–56%), water objects and beaches (10-15%), children's recreation (5-8%), etc. (5-15%).

Sprinkling of crowns – agrotechnical method of taking care of trees in street plantations, which is to create "artificial rain" with the help of watering machines. The leaf plates of trees, which suffer from excessive layers of dust, that reduces the intensity of biochemical processes are washed. The rate of water expenditures per plant is 100-120 L.

Spruce tree forests – are forests, in the tree stands of which different species of the genus Picea (Picea abies (L.) Karst., P. obovata Ledeb., Etc.) dominate. They are characterized by strong shading of the soil, poor development of shrubs, the presence of an overland cover of gypsum etc.

Stability of phytocoenoses – stability of the structure of phytocoenoses, energy balance, circulation of substances; the ability of phytocoenoses to maintain its structure and functional features under the influence of external factors.

Stability of the natural complex – is its ability to withstand the recreational load to a certain extent, after which there is a loss of its ability to self– regenaration. Thus, the load on a suburban forest that exceeds 8 people per hectare can lead to a state of digression, which is manifested in the deterioration of the status of biocoenoses, consolidation of soils, the destruction of undergrowth and underforest, the disappearance of the fauna, the depletion of the aesthetic image, etc. The stability of natural complexes is influenced by the characteristics of woody and shrub breeds, soil and hydrological conditions, the slope of the terrain, the exposure of the slopes .

Steppe zone (steppe) – a natural zone of temperate and subtropical belts of the Northern and Southern hemispheres, in natural landscape of which steppes dominate – biomes with dense grass cover of feather and other grasses .The modern territory of this zone is mostly under cultivation.

Stepped shape of the canopy of the forest plantations – the stepped arrangement of crowns, formed by the cultivation of various species of shrub and vegetation to achieve their optimum purpose (aesthetic, aerodynamic, phytoclimatic, recreational, balneological etc.) in the zone of their effective influence.

Stolon-forming cereals – are grasses with jagged above–ground stems, they radially retreat from above the tillage zone above–ground shoots more or less tightly pressed to the soil, which grow in the nodes to the soil and form additional rosettes of leaves and vertical shoots. These herbs are divided into creeping, semi–creeping and attaching. They form medium dense grass stands. When mowing, the yellow and brown bases of the shoots are often exposed.

Stratification – a process used to break the dormancy of a seed. It usually requires that the seeds be placed in a moistened rooting medium and kept in the refrigerator or freezer for a designated length of time.

Stream – is artificial or natural watercourse with a winding channel and rocky bottom, which forms the reluctant raging flows on the relief.

Street and road network – (designed for vehicle traffic and pedestrians)- it is a network of streets, public roads, intra- and other driveways, sidewalks, pedestrian and bicycle paths and embankments, squares, street parking lots with engineering and subsidiary facilities, technical equipment of traffic organization.

Street plantations – trees (sometimes shrubs) planted along the main and other streets with car and pedestrian traffic, that are able to withstand severe environmental pollution and at the same time conduct ecological, hygienic and engineering–protective functions. There are the following typical elements of street landscaping: ordinary plantation of trees on sidewalks, planted in the holes; ordinary plantation of trees in the belts of lawns or flower beds; the green belts in front of the houses (between a sidewalk and a pavement).

Strict planning (construction) regime of the territory of the park – extends to that part of the territory, where the main spatial composition structure is not preserved, and it is allowed to include additional elements of construction and improvement (additional trails, paths, small playgrounds and recreation areas, pavilions etc.).) that do not distort the formed structure. The mode of use is free, on paths and trails, but without the arrangement of beaches, parking lots.

Strict protection regime of the park territory – is established in park-monuments of garden and park art of state and local significance. Under strict protection regime only the limited use is allowed in the form of organized excursions by the specified routes and all types of modern construction and improvement are completely prohibited.

Stripocoenoses – plantations in the form of strips of various purposes, where the determining component is woody species and shrubs. Depending on the main purpose, the location in a specific functional type of the landscape the stripocoenoses can act as: field–protective (wind-streams) strips for the protection of arable fields from the destructive effects of wind; water-regulating (water-absorbing) or snow-split strips for protecting the fields from water and wind erosion; peripheral strips – for preventing formation of fires, with field-protective and water-regulating functions; forest strips around settlements, forest bands along highways and railways; sanitary-protective bands, etc.

Structure of biocenosis – is gical niches between plant populations and contributes to the reduction of comthe distribution of biocoenosis into vertical and horizontal divisions: tiers, consortia, parcels, etc.

Structure of phytocoenosis – is a spatial arrangement of various elements of phytocoenosis – populations, individuals. There are vertical (by tiers) and horizontal (by layers). Structure of phytocoenosis increases the possibility of differentiating ecolopetition, the increase of stability and productivity. In the agrophytocoenosis, the presence of mosaic is created, mainly due to the specific placement of dominants (rows, nests), which determines the patterns of segetal plants distribution.

Structure of the landscape – is a set of stable ties of the landscape, ensuring its integrity and identity to itself. The idea of it includes three aspects: the mutual arrangement of the constituent parts, the internal system-forming connections and the orderly modification of its states in time. The morphological structure involves the allocation within the landscape of simpler geosystems or natural territorial complexes: facies, terrain etc.

Structure of the soil – is a set of individual particles or aggregates, from which the soil forms and in which it naturally decomposes in a state of physical maturity (lumps). Each aggregate (lump) is a complex of mechanical aggregates connected in macro- (diameter over 0,25 mm) and micro- aggregates (diameter less than 0,25 mm) by organic mineral colloids, plant roots, detritus.

Style – in landscape architecture and landscape art it is a consistent set of compositional–planning, constructional-agrotechnical principles and methods of creating objects in a certain historical period. The style is closely linked to the social structure of society, reflects the level and nature of the development of architecture and urban development, ornamental horticulture and the industry of green landscaping and economy, the aesthetic ideals and artistic tastes of society. In the history of garden art, regular and landscape styles are recognized. Regular style has absorbed several metric-formed types: French – on a flat relief, Italian – on an expressed relief, Dutch – a flower parterre. The landscape direction is called English.

Sub-alpine landscape (according to the classification of B. B. Polinov) is a local reservoir with the dominance of the process of introducing a substance with a solid and liquid flow over the removal.

Suburban green zone – an area outside the city zone, occupied by forests, forest parks and other green territories, which performs protective and sanitary functions and is a place for recreation.

Succession – is a consistent, mostly irreversible (rarely cyclic) change in bio-(geo-) coenoses that alternately change on the same territory as a result of the influence of internal (autogenous) and external (alogenous**)** factors. V.M. Sucachov has identified four types of successions: 1) syngenetic; 2) endoecogenetic; 3) exogenetic; 4) gologenetic. Under optimum conditions, each succession ends with the appearance of a climax or nodal group. There are the primary (on substrates that are not disturbed by soil formation) and secondary successions occurring on the site of formed biogeocoenoses after their destruction (as a result of the fire – pyrogenic, deforestation, drought, erosion, volcanic eruption etc.).

Succession of the landscape – is a consistent change of the states of the landscape towards a dynamic or close to it dynamic state. The term is transported from geobotany to the landscape ecology by K. Troll and is used in studying the dynamics of landscapes.

Succession stage – is a definite stage in the development of ecosystems in succession. F. Clements distinguished 6 stages: denudation; pioneer stage (immigration); colonization (oicos); inter species competition; biocenotic reaction; stabilization (climax). The development of biocoenosis from pioneer to stabilization stage is a series.

Succulents – plants with juicy, fleshy stems or leaves. The succulents include the family of Cacti (cactus, opuncium etc.), Amarillaceous (agave). Succulents are commonly found in the deserts of Africa, Central and South America. There are few succulents in the flora of our state; they include only plants from the family of plants with thick leaves. The succulents have a very branched root system, located in the surface layer of soil and after rain it quickly absorbs water.

Suddenness – is an unexpected discovery of an object, a space that forces the viewer to pay attention to a certain aspect. Suddenness can be created by revealing a certain picture, for example, a sunny lawn in the middle of a park massif or the appearance of a sculptural group or an arbour in a remote part of a park. It can also be a wild rock (or hidden spring), which causes admiration, that is, an object with certain mystical qualities .

Sun-dial clock – is a device for measuring the time by changing the length of the shadow from the gnomon and its movement on the dial. The appearance of the sun-dial clock is associated with the distant time when the humanity understood the connection between the length and position of the sun shadow of certain objects and the position of the sun in the sky. This clock appeared in 3500 B.C. and to our days is a popular element in gardens and parks.

Supporting walls – engineering structures designed to strengthen the steep slopes and the connection of one plot with another under the presence of relief changes; they are mostly arranged on slopes where a platform or stairs are expected, on the boundary of an object with the adjacent below streets. The supporting walls should arrange clearly the space, determine the boundaries of the composite sections, complete interesting perspectives, enhance the large–scale perception and create aesthetically completed landscape compositions. Depending on the conditions of the relief the angle of the slope of the supporting wall is determined by the formula $i = h / l$ where i – the angle of inclination, h – the height of laying the wall, m; L – the length of laying, m.

Survey – a target study (review) of the designated areas for the purpose of obtaining their quantitative and qualitative characteristics.

Swamp soil – soil that is formed under conditions of excessive moisture, under specific vegetation grown on moisture soils that has a powerful (more than 30 cm) peaty horizon on the surface. It is divided into upper, which is formed in the conditions of excessive atmospheric moisture; lowland – in the conditions of soil moisture and transitional ones.

Sweet lawns – are designed to saturate the surface layer of air in big cities and industrial centers by pleasant scent. These lawns have long been designed and are created in Western Europe. The peculiarity of creating a scented lawn is the introduction into the composition of grass mixtures seeds of grasses, the flowering of which is characterized by a strong flavour, thus mowing such lawns should be undertaken only after flowering of the main composition of aromatic plants.

Symmetry – is a regular arrangement of identical figures relatively to the axis or plane, characteristic for parks. The axis can be a line of motion (road, street) or a line of sight, which passes between the backstage by open space and is aimed at any object. In symmetrical compositions, the equilibrium is achieved by the equilibrium of forms and distances .

Synecological optimum – a set of conditions of biotic environment, in which the species undergoes minimum pressure from competitors, which gives it the opportunity to achieve maximum development in the group.

Synecology – is a section of ecology that studies the relationships of groups of plants, animals and microorganisms with the environment.

System analysis – the process of transfer of chemical or biological concepts about any system into a number of mathematical functions and operations with them.

System approach – is methodological, comprehensive. It characterizes the higher theoretical level, it is more complete and closer to the nature of systems and therefore it is more objective comparing with the complex approach. The system approach develops within a single science – systemology (a theoretical discipline that deals with methodological problems and sign models of complex systems). It has the general theoretical character and reflects the integration processes between the elements of various sciences that penetrate the system logic as a whole. Moreover, the development takes place at the level of new (synthesizing) knowledge, which has a system–oriented character: the establishment of various ties, principles, laws, regularities.

System variable of ecosystem – are the basic elements of mathematical model of ecosystems that are presented as a series of numbers and are used to express the condition or state of the system at any point in time.

Systematic principle of plant selection – is to select plants (for dendrological parks, botanical gardens and arboretums) according to their relation to a particular systematic unit (class, order, family or genus).

T

Tapestry – 1) a number of densely planted low–growing trees or shrubs, created in the form of a wall or on supports of a special construction made of wooden or metal lattice or stretched several rows of metal wire, fixed on columns; it is used on separate sections of a park territory, in gardens with utilitarian nature of use, in parks–exhibitions; 2) a system of supports which serves for fixing plants; it can be used for vertical gardening, the creation of heavens from vines, as well as in vine growing or horticulture for horizontally securing shoots.

Taxation indicators – a set of biometric indicators and characteristics of individual trees and forest plantations in statics and dynamics.

Taxon – is a group of organisms that are associated with the common character of signs and properties, which serves as the basis for their association in certain taxonomic categories, the name of the classification units, indicating their rank or place in the system. It is applied in biology and geography in zoning.

Taxonic structure – is a set of classes, genera or species of soil microorganisms of a certain coenosis and their quantitative characteristics.

Taxonomic degradation of plantations – is a reduction in the number of taxons comparing with one that was in the park. Over the past decades, flower–decorative plants – annuals, biennials, and later perennials – disappeared in the parks. As to the wood–shrub plantations, the decomposition, as a rule, began with the shrubs that suffer from inadequate care, shadowing by self–seeded tree species or reached the age limit. Among the tree species, the least stable are highly decorative forms.

Technical reclamation – a stage of land reclamation, which includes planning, the formation of slopes, the removal of transportation and application of soil and fertile rocks on recultivated lands, the construction of roads, hydraulic engineering and reclamation facilities, etc.

Technogenic ecosystem – a functional system of living organisms and the environment that have arisen or significantly have changed under the influence of technogenic factors.

Technogenic landscape – anthropoecosystem – a kind of landscape, where a man (industrial activity) acts as a central element that determines the functioning and structure of the landscape.

Technogenious relief – it is created as a result of human production activity.

Technological assessment of landscapes – the assessment of natural–territorial complexes, their components by the degree of suitability for a particular ty. Technological assessment of landscapes - the result of evaluative geographic studies of the interactions between natural and technical systems. Priority in conducting technological assessment is the choice of rational technology of nature use, which determines the suitability of the estimated landscape complex for a particular type of economic activity. It is influenced by their position within certain physical-geographical zones, provinces, etc., the duration and technology of nature use, the level of human transformation, the cultivation and economic performance of landscapes, as well as social needs (intensive agriculture, urban development, the location of energy facilities, environmental protection, the preparation of land cadaster complex land reclamation etc.).

Technological changes – changes in biocoenoses caused by means of industry, or otherwise associated with the development of industry. They have the character of primary and syngenetic successions.

Temperature optimum – the temperature of the environment, in which life processes in organisms occur at an optimum level.

Temporary reclamation – is carried out on lands where changes in their use are planned in the future – secondary processing of minerals, construction, etc.

Tender – is a form of placing an order for the execution of search, design work and construction of an object, which involves selecting the contractor by evaluating his proposals and the conditions in which he agrees to execute the order.

Terrace – a horizontal or slightly inclined plane, arranged by the pouring of soil under the vertical planning of the territory in the form of a ledge on the slope; it is decorated with a sculpture, original fence, multi–level transitions, retaining walls. The first mention about the terraces is found at the site of the Italian gardens of the Renaissance .

Territory – a set of land plots used to house public facilities: parks, squares, boulevards, streets, alleys, roads, quays, adjacent areas, beaches, cemeteries, recreational, educational , sports, historical and cultural objects, the objects of industry, etc. within the settlement.

Territory balance – the proportion of the elements squares of the plan (structural elements) of the object –plantations, roads, playgrounds, ponds, structures, buildings, which is expressed in absolute (m^2) and relative (%) units.

Texture of the crown – is a peculiarity of the surface construction of the crown and the leaf cover of the tree plants, which is determined by the size of leaf plates, the nature of branching shoots, the shape of leaves. The crusty texture of the leaves is peculiar for oak, elm, poplar; graceful – for willow, gledichia, sophora, robinia, forms with dissected leaves.

Texture of the soil – is the mechanical composition of the soil. In foreign literature it means "granulometric composition of the soil".

The golden section – is a harmonic division of a segment into two parts so that the biggest part is considered to be proportional between the whole segment and the smaller part of it. The principle of the golden section is used in art from antiquity, Renaissance to the present days.

Thermal mode of biogeocoenoses – the nature of changes in the amount of long–wave solar radiation entering the biogeocoenosis, natural change in their heat exchange and temperature during the day, growing season, a year or several years.

Thermophile – the organism that prefers high temperatures of the environment. These include many bacteria (growth temperature is 70-90° C and higher), microscopic fungi and algae (55-60° C), protozoa (45-50° C), insects of azide zones, many tropical birds etc. Animals–thermophiles cannot exist under conditions of temperature lowering less a certain threshold.

Thermophytes – thermophilic plants that do not withstand the reduction of preplus temperatures, develop optimally at temperatures about 26° C with minor daily and annual fluctuations. Tropical thermophytes (pineapple, cocoa etc.) do not withstand even a short–term decrease in temperature up to 5° C, and subtropical (rice, cotton) – up to 1° C.

Thinning – is an agrotechnical method of growing flowering plants, which consists in removing lateral auxiliary shoots to increase the growth of one or more stems that have the basic buds or inflorescences, as well as to grow plants of the parent form. It is done manually, with a knife or a scraper, very carefully so as not to damage a stem, as it may cause distortion. The closer to the top the auxiliary shoots are, the sooner and more carefully they must be removed.

Three-layers forest plantations – forest protection stands, consisting of trees and shrubs of various breeds, located in three height layers – in 3 tiers.

Threshold border – is the concentration of a substance that characterizes the transition in appropriate conditions from its maximum action, which does not have a negative effect, to a minimum influence that causes a negative effect latter.

Tier – is the vertical structural part of the plant group (phytocoenosis). For example, a tree tier, shrub tier, etc. The tier of a tree stand is a part of the trees that forms the main element of the vertical structure of the forest and has a certain mode of illumination and other conditions of growth and development. The cryptogram layer is the lowest tier in the plant group, which consists predominantly of bryophytes and lichens. The moss–lichen tier is the lowest tier in the forest, formed from two life forms – mosses and lichens, which sometimes, together or separately form. Plantation tier – a tree-like, liquefied or almost solid or a set of other plants that occupy a definite position in the vertical structure of plantations and the corresponding regime of environmental conditions. Low– grass tier – one that is made up of low, predominantly herbaceous plants or groups, characteristic of low-grass prairies and savannas). The shrub tier is – the second, if we count from above, the tier in the forest, formed by shrubs. Sometimes it includes some wood species.

Tier organization – the dismemberment of the plant group into the horizons, layers, tiers, and other structural elements. It is used to study the laws of their functioning in complex biological objects, the transfer of the laws of their sustainable development into artificially created anthropogenic systems for increasing their overall biological productivity (cultivating-phytocoenosis), managing their meliorative-protective potential (forest-melioration stands), sanitary–recreational potential (forests of green zones, settlements, recreation centers), etc.

Tier organization of the relief – is a consistent vertical change in the type of relief with a change in altitude, due to the natural climatic zoning based on the evolutionary processes of mountain regions. It is important to take it into account during the eleboration of forest-melioration activities.

Tillering node (about lawn forming grass plants) – stem nodes with short internodes placed at the base of stalks. From the tillering nodes additional roots develop, which form the bulk of the root system. From the auxiliary buds located at the nodes of tillering, side shoots grow. On each new shoot at the bottom its own tillering node with new roots and shoots develop, which can also bush etc. Thus, one plant can have several dozen of stalks. This ability of cereals to intensive tillering makes them extremely important when creating lawns of different types.

Top bud – predominantly vertical shoot with excessive growth; it grows from dormant buds on the older branches of the tree.

Topiary art – is the art of trimming and forming plants in the form of various shapes. It comes from the name of the famous Roman gardener Topiarius, who possessed the art of creating a variety of plant figures. It is made mainly of vegetable materials: from trees, shrubs, herbaceous plants, for example, from jasmine, lavender, boxwood, birch. It is now quite popular in England and Holland.

Tourism zone – the area occupied by tourists' centers and institutions, with adjoining tourists routes, and also designed for having rest **.** From the point of view of increased recreational pressure on the environment within tourist areas measures for preventing violations of the tourists rules in the conservation of nature and natural resources are important.

Trace elements (microelements) – are chemical elements contained in plant and animal organisms in very small quantities. The majority of the trace elements is a part of enzymes or increases their activity: hormones, vitamins, pigments, causing their high biological efficiency. Taking part in the metabolism, they affect the development, growth and reproduction of organisms.

Transformation of forest parks is the process of transformation of the forest landscape into a forest park in order to identify the most typical elements of one or another type of forest and, first of all, landscape-breed (oak, pine, beech or birch stands). The process of transformation is long and for its realization all existing means, and methods of landscape reconstruction are used: landscaping cuttings and planting, sowing of grasses, landscaping of the territory; the reconstruction of open spaces: meadows, areas near the water reservoirs etc. On these areas caring for grass cover is carried out. The organization of public services and amenities foresees the creation of amenities for visitors, and in the first place the conditions of movement in a forest park, that is, the construction of roads, paths, bridges, transitions, as well as the arrangement of specific sites.

Transformation of the landscape – a system of measures aimed at transforming the landscape into the state that ensures the fulfillment of new socio–economic functions or a significant increase in the efficiency of their implementation. There is a greater depth of landscape change comparing with conventional anthropogenic influences and is often accompanied by the appearance of anthropogenic elements in the landscape (fields, gardens , buildings, roads, industrial designs) and its further transformation into a techno-geosystem. It is desirable to ensure the preservation of its structure within the framework of the invariant and the ability to reproduce the resources and environment conditions.

Transgenic plants – artificially bred varieties of crops which have increased resistance to herbicides, pests, viruses etc. (e.g., transgenic plants of potatoes, soybean, cotton, corn, sugar beet etc.).

Transpiration – is the evaporation of water by terrestrial plants. It is a complex physiological process. There are stoma and cuticle transpiration. The cuticle transpiration is 10–20 times slower than the stomata**.** A significant amount of water that is evaporated by the plant is not necessary for normal plant life. Therefore, in the course of the historical development of plants, a number of adaptations appeared to reduce transpiration (optimally developed cuticle, wax plaque, and the formation of hairs). Transpiration creates a continuous movement of water, which facilitates the movement of various juices in the plant, and first of all mineral salts dissolved in water. At the same time, transpiration reduces the temperature of leaves and protects the plant from overheating.

Transplantation – one of the methods caring indoor plants, which consists in changing the place in which the plant grows, as well as soil mixtures. It is used to improve plant nutrition conditions, air access to the roots, as well as in the case of plant diseases (for example, rotting of the root system), yellow leaves and, if necessary, the separation of plants. It is conducted once every 2-3 years (depending on type), less than transshipment.

Transshipment – is an agrotechnical treatment of indoor plants, which increases the amount of plant soil and capacity in which the plant grows, without thereby violating the integrity of the earth lump. This method is relevant for young plants that grow intensively. The advantage of this method over transplantation is that the plants receive additional nutrients that are necessary for intensive growth without receiving any damages. The disadvantage of transshipment is that it needs to be done more often than transplantation, because the volume increases insignificantly.

Tree species – 1) a species, a genus, a family or not systematic, and economic group of tree plants – main breeds, accompanying breeds, conifers, deciduous breeds etc.; 2) a set of species (varieties) of trees and shrubs with similar economic or biological characteristics: seed, stone, nut bearing, subtropical etc.

Tree stand type – is the smallest unit of forestry-ecological typological classification, which unites forest areas, similar in composition of a tree tier in homogeneous soil-hydrological and climatic conditions. Tree stand type is singled out according to the predominant breed and its characteristic admixture. There are indigenous and derivative ones.

Tree-shade type of planting – is a combination of main and shadow (auxiliary, pedigree) breeds without shrubs. Dwarfish (up to 1 m) shrubs are introduced in a small number, mainly in the extreme rows.

Tree-shrubbery type of planting – is a combination of tree and shrub breeds, which is about 50%.

Trees–monuments – the individual trees or groups of trees protected by the state as a valuable cultural–historical exhibits and botanical monuments of nature. The protection of commemorative trees includes their certification, transfer to land users under preservation orders, fencing, prevention and current treatment. It has significant scientific and educational value.

Trellis – a garden-park support, made of wood or metal in the form of a lattice, on which the wicker plants are set up; it is designed for creating quiet corners for the rest, fencing of economic areas and centers of technical services, masking nonexpressive park areas.

Trimming – is a kind of molding trimming that is used when creating artistic decorative green shapes and figures, as well as green walls, hedges, borders etc. The peculiarity of such molding is systematic shortening of the growing shoots, which contributes to the intensive branching and number of leaves on the surface of green shapes and walls. There are weak, middle and strong degrees of shortening annual shoots.

Trimming "to the stump" – is a kind of rejuvenating trimming, which foresees the creation of a strong, wide-grown bush with a large number of main shoots, suitable for the use in plantations at green landscaping in the short term (2-4 years) . When growing shrubs in a nursery two trimmings "to the stump" are applied: the first - during the first year and the second – during the next one.

Trimming trees and shrubs – is a shortening or thinning of certain parts of the plant in order to stimulate their growth, flowering or fruiting. The degree of trimming can be different – from the removal of large skeleton branches (from trees) to pinching faded flowers (in roses) or young sprouts (in indoor plants, for example, fuchsia, to stimulate flowering). There are molding, sanitary and rejuvenating trimming.

Trophic levels – a set of organisms that are united by the type of nutrition, characterized by a certain form of organization and utilization of energy. The food is assimilated on each trophic level not fully and a significant part of it is lost, being used for the exchange. The production of organisms in each of the next trophic levels is always smaller (in average, by 10 times). The correlation of trophic levels can be clearly represented as an ecological pyramid.

Trophogenic soils – technogenically transformed soils without application of applying a humus layer on its surface. In the interaction between soil and plants, there are two ways of biological circulation: the ascending one – the movement of nutrients from the soil to plants and the descending – the movement of nutrients from the plant to the soil.

Trophy – is the absolute and relative wealth of ecotypes for nutrients, which is determined by the nature of soils, rocks and sediments, the content of dissolved salts that are available to plants. Indicator plants (trophoindicators) are used to determine the level of trophy. On their basis, the indicators are divided into oligotrophic herbs (Trophy of types A, B) and wood (A-C), mesotrophic herbs (B, C), megatrophs (C, D), ultra megatrophy (D).

Tropophytes – plants that grow in areas with irregular alternation of wet and dry periods during a year. In the process of evolution, they are adapted to changing humid conditions due to the ability of regulating the water balance of their organisms. It is expedient to use them when creating forest-melioration plantations and other heavy conditions for other types of habitat conditions: in semi-deserts, dry steppes and other places with little moisture.

Two-layers forest plantations – forest protection stands, consisting of two wooden tiers: a tree tier, and a tier of undergrowth and underforest.

Two–years shoot – the cycle of the development of which passes from the buds opening to fruiting and dying taking two vegetation periods (species of the genus Cichorium).

Type of forest – a set of forest areas that are homogeneous in composition of wood species and general vegetation, fauna, climatic, hydrological and soil conditions, relationships between living components and abiotic environment, the ways of utilizing the flow of energy and the direction of development.

Type of forest park landscape – is an image of a forest area with a certain structure of tree stands and the closeness of its tent, the level of filling the area with the tree–shrub vegetation and the nature of its placement. The type of forest park landscape is determined in accordance with the classification proposed by M.M. Tulipov, which involves the allocation of seven types of landscape within the limits of their three groups (closed, semi-opened, opened).

Type of landscape – is the highest taxonomic unit of the typological classification of landscapes, which unites them with similar genesis, physic-geographical process, morphological structure etc.

Type of pasture – the combination of lands used for grazing cattle based on the proximity of the species composition of plants that form groups and determine the feed quality of herbs, the nature of the surface of the soil and other features.

Type of planting – is a working scheme of planting with the indication of trees and breeds and shrubs as well as placement on the area.

Type of shrubbery planting is the type of forest plantation, which involves only the use of shrubs.

Type of soils – is the highest taxonomic unit of soil classification. Certain type of soils is formed in closely interconnected biological, climatic and hydrological conditions and is characterized by a clear manifestation of the main soil formation process.

Type of tree planting – is a type of planting including only wood species in the forest plantation.

Type of vegetation – a set of similar in structure and functions of plant formations, the dominant species of which belong to one life form. The types of vegetation are the highest classification unit of vegetation, which combines morphologically, structurally and environmentally similar plant formations, in which the tier of the same biomorphs (forest, shrub etc.) prevails. The type of vegetation is woody–shrub –one of the highest ranks of vegetation classification, which includes forests and shrubs of the Earth.

Typological principle of plants selection – an integral part of the ecological principle. It takes into account the ratio of individual plants to fertility (oligotrophs, mesotrophs and megatrophs) and moisture (xerophytes, mesophytes and hygrophytes) of the soil, on the basis of which various conditions of habitat are determined.

U

Ubiquist – species of animals and plants living in different ecological conditions, differing in their ecological characteristics. Ubiquists can exist almost in all climatic conditions, different salinity of water, in dissimilar places of growth. For example, common pine, which grows on sphagnum marshes, limestones, sands and clay soils.

Underground shoot – is placed in the soil and with which the plant can successfully tolerate adverse living conditions (winter, arid period, etc.). A significant amount of spare nutrients is accumulated in underground shoots. With the help of which a plant can reproduce vegetatively. The main forms of underground shoots are a rhizome, a tuber and a bulb.

Undergrowth – is tree plants of natural origin with a height of 1/4 of the tree floor, growing under the canopy of the forest and are able to create a future tree stand.

Unity of form and content – one of the most important laws of artistic creation, the essence of which is that form of artistic creation is organically linked with the content and determines it.

Urban development – is a complex many-sided activity of society, aimed at creating a material–spatial environment of human life in settlements and areas of settling. Urban development activities include research, design and management of the processes of implementation of activities that determine the formation and development of a functional , architectural and planning structure of populated areas and areas according to demographic, social, economic requirements and environmental and natural conditions; development of engineering and transport infrastructure; preservation and enrichment of the environment. Means of solving urban planning tasks are the rational planning organization of the territory and the coordinated mutual arrangement of residential areas, industrial complexes, recreational zones, public centers etc. As a branch of architectural activity, urban development is aimed at creating urban ensembles that combine buildings with natural surroundings. The scale and nature of objects determine the peculiarities of architectural creativity in urban planning, which is based on the principles of historical heredity, that reflects the objective conditions of the continuous process of development of populated places.

Urban landscapes – anthropogenic landscapes, the main qualities of which are determined by the type and conditions of cities or urban agglomerations; they are characterized by a profound transformation of natural landscapes and especially by concentrated transforming influence of a man both on individual natural components and on the environment as a whole.

Urbanization of the territory – is a process of transforming natural landscapes into artificial (man-made), developing under the influence of urban development. It is accompanied by abrupt changes in ecosystems (almost to the complete destruction of biogeocoenoses) and the formation in their place of so-called urbanic, which include residential and industrial facilities, land plots occupied by transport, engineering and other buildings and communications, areas of unbuilt but significantly transformed natural landscape. In the broad sense, urbanization is understood not only as the growth and development of cities and suburban areas, but also as the whole complex of associated phenomena and changes in the natural environment.

Urboecology – is a science of interconnections and interaction in time and space of two systems – urban (in the subsystems – social, technical, informational, administrative etc.) and natural, as well as of the noosphere management of the urboecosystem.

Utilitarian gardens – fruit and berry gardens, vegetable gardens, hop gardens or vineyards, which are always laid around castles. All this area was surrounded by a hedge of wooden or stone fence. In addition to fruit and vegetable crops, decorative trees and flowers were also grown there. This part of the castle territory was also used for walks. Fruit trees: apples, pears, plums, cherries, nuts etc. were grown. In the gardens of the Mediterranean, oil, laurus nobilis (bay tree) and cedar were planted.

V

Valid epiphytes – plants which spend their entire lives in trees without contact with the soil.

Vegetation – the manifestation by a plant active processes of life during the season. In the processes of photosynthesis, growth, assimilation of minerals from the soil take place. At the end of the growing season deciduous plants shed their leaves. The length of the growing season in different plants varies, depending on the state of ontogenetic state, development and plant growth conditions, including lighting, humidity, temperature and conditions of nutrition. Plants vegetation is the state of active passing of vital functions of plant growth and development until their yellowing, waxy texture of grain (its moisture content is reduced to 22-30%).

Vegetation association – the basic unit of taxonomic classification of vegetation (vegetation cover); a type of plant communities, relatively homogeneous by species composition, phytocoenotic structure, environmental factors and ecological environmental phytocoenotic relationship between the components of a group. According to the definition of Brussels Botanical Congress (1910): "Association – a plant grouping with a particular plant floristic composition, uniform habitat conditions and the same physiognomy (appearance)."

Vegetation cycle – a period of individual plant development, during which under appropriate conditions, their vital activity and reproduction of offspring are carried out.

Vegetation period – the time of plants life activing, the period of their growth and development. It lasts from seed germination and maturation of new ones. Annual plants growing season lasts throughout their life period, the biennials have the life cycle with two growing seasons, the duration of which may differ, because during the first and the second year of life there are different formative processes. The growing season of perennials repeated every year from spring awakening to passing into the state of dormacy (summer or winter). The duration of vegetation period depends on the species and varieties of plants, weather, climate and other factors and it is an indicator of the fact how much the external conditions correspond to biological characteristics of cultivated plants.

Vegetation phases (phenological) – phases of plant development – change of external signs of plants during their growth; morphological manifestations of the stages of ontogenesis are associated with the emergence and development of individual organs. There are phenological phases and phases of the formation of the embryonic organs in the apical meristem of the stem. Phases are indicated by separate letters: Yu – juvenile, B – budding; F – flowering; P – presence of ripe fruit and seeds; Vf – vegetation after fruiting; E – extinction; Wb – wintering buds**.** Under conditions of conducting geobotanical studies, it is important to distinguish the state of vegetative and generative organs, that is, their phases do not always pass consistently (flowering, and then vegetation or vice versa). A more detailed division into phases: vegetative – the beginning of juice movement ,the bulking of the buds, the beginning of shoots growth, the greening of the leaf buds, the deployment of leaves, summer loss of leaves, summer calm, individual shoots drying, buds laying, the beginning of the autumn colour of the lashes, complete loss of leaves, winter dying of shoots, dead plant; generative – flower buds swelling, flower buds deployment, opening of the first flowers, mass flowering, the end of flowering, beginning of fruit maturing, mass binding and ripening of fruits, beginning of decline of fruits or seeds, end of falling, fruiting is complete, no signs of plants generation.

Vegetative formation – is one of the classification units of vegetation, which unites related groups of associations and is singled out by the dominance or edificator role in phytocoenoses of one or several species belonging to one vital form of plants . Formations may include genetically and environmentally diverse associations (pine sphagnum bogs). Chasmophyte formations are plant formations with unclosed vegetation cover.

Vegetative organs – they functionally support the individual life of a plant. They include a root and a sprout and their metamorphosis.

Vegetative propagation –the method of propagation by the division of shrubs or individual organs or their parts. In ornamental horticulture it is of great significance because thus decorative peculiar traits of initial forms which under seed propagation especially hybrid forms are transmitted to offspring with certain deviations or distortions. There are the following types of vegetative propagation: by cuttings, layering, grafting (budding) and by tubers, bulbs, rhizomes.

Vegetative tree stands – forest stands, formed as a result of vegetative renewal of parent stand from sleeping and adventitious buds. By root coppice ability breeds are divided into 4 groups: 1) trees and shrubs that form numerous propagated shoots (aspen, white poplar, elm, cherry, raspberries, etc.); 2) trees and shrubs that have poorly expressed propagated ability to form shoots (poplar, sweet chestnut, alder gray, quince, cherry, barberry, hazel, ash etc.); 3) breeds that form only regenerative shoots (elm, pear wood, cherry, birch, field maple); 4) species in which the ability to form root shoots is poorly expressed or is not typical for them (horse chestnut, beech, oak, ash, pine, larch, spruce).

Vermiculite – a lightweight, flaky mineral called "mica" that has been heated to the point of expansion. The sponge-like granules are capable of holding both water and air. This amendment is added to potting mixtures and container gardens to improve root growth due to aeration and moisture retention.

Vertical gardening – a kind of decoration using climbing (vines) and ampel plants on special designs (pergola, facades, balconies, etc.), designed to protect certain areas from outside influences, insulation, masking, enhancing the degree of comfort space.

Vertical gardens of Babylon – the ancient monument of landscape art of Babylon. According to ancient legend, the hanging gardens of Babylon were located on the east bank of the Euphrates River, about 50 km from the southern part of Baghdad (Iraq). In architectural expession Vertical Gardens were a pyramid consisting of four tiers – platforms, supported by columns up to 25 m. The lower tier had the form of improper quadrangle, the largest side of which was 42 meters and the lowest – 34 m. To prevent saturation of irrigation water, the surface of each platform was firstly covered by layer of reeds mixed with asphalt, then by two layers of bricks, tied by gypsum solution, lead plates were placed over it. Then a thick layer of fertile soil lay lied where seeds of various herbs, flowers, shrubs, trees were planted.

Vertical grouping – an ecological open system, defined by the relationship of predation, parasitism between organisms of different species, ensuring their consistent coexistence in a certain spatial-temporal interval.

Vertical planning – a complex of engineering activities aimed at transform action of relief both in compositional and in technical aspects; it includes the organization of rainwater and meltwater runoff, preservation of old valuable trees, fertile topsoil and surface vegetation, scenic relief by arranging slopes, retaining walls, stairs, ramps etc. Vertical planning scheme is developed on geodetic basis and general plan of the object taking into account research materials; scale schemes for gardens and parks are accepted in the form 1: 1000 or 1: 500.

Viability – the physiological characteristics of the plant organism, its body or part, which expresses the ability to a certain intensity of metabolism firstly to the synthesis and self–renewal of proteins, and accordingly, to a certain rate of growth and duration of life under favourable environmental conditions.

Viability of weed – the ability of plants of a certain species of weed to keep their existence in changing environment, resulting in a certain intensity of metabolism, growth and life length.

Virgin soil – is a natural type of land that has never been used in agriculture and is under natural vegetation (for example, in Ukraine, they are Mikhailivska virgin soil, Khomutov steppe).

Viridarium (medieval) – the type of gardens in confined by galleries square courtyard of the convent. It was designed like a Roman peristyle representing a complex where the garden was closely linked with the surrounding architecture of the house: an ornamental garden–paradise, opened only to the sky, where one can meditate sitting, staring at the organized piece of nature, or just walk around. Viridarium was geometrically laid out by paths that passed through the perimeter and intersected at the diagonals. In the design of viridarium ornamental shrubs and flowers, as well as sometimes herbs were used.

Virous insecticides – are designed to combat harmful insects; biological preparations based on entomopathogenic viruses that cause infectious diseases and death in favourable insects. Viruses of insects like other viruses develop only in the cells of living organisms, affecting the cytoplasm or a cell nucleus. According to it there are nuclear and cytoplasm viruses**.** Entomopathogenic viruses form inside infected cells, insect cells include as polyhedra or granules containing inside virus particles. Entomopathogenic virus is highly selective as to the target insects, so the virus preparations are produced products against specific pests. The remaining amount of viral insecticides on treated plants are safe for people. During the first hour of treatment there is 10^{3} –10^{4} polyhedra/cm^2 on plants. After 3 days the level of pollution is reduced by magnitude. Virus insecticide preparations forms vary: polier suspensions, granules in 50% glycerine, moistured powders containing cells, inclusion and fillers. 1 ml (or 1 g) of the drug contains from 1 to 10 billion inclusion bodies.

Vista – view of the area with a narrow vision that is limited by narrow planes and directed towards the interesting element of the landscape – the focus of perspectives.

Vitocoenosis – a type of agricultural lands in viticulture areas. Vineyards are located on the lands of the ancient shores of the hydrographic network, mainly South–Eastern, Eastern and Southern exposure. These slopes are better warmed up, and in the presence of some sediments at a depth of not less than 1.5-2.0 m are the most favourable for viticulture.

Vivarium – an ornamental pond with various species of fish, aquatic birds and ornamental aquatic plants.

Volume of plants – is determined for the establishment of stock or growth of organic mass in the group, especially when taxing the forest. There is a number of formulas for calculating the volume of trunks of model trees based on their measurement. While studying herbal phytocoenoses, the volume of plants is determined rarely and even more rarely the specific volume – the relation of plants to the volume of space is defined (Ilyinsky, 1922). The volume of plants is determined by dipping the plants into a measuring vessel, which is calculated by the volume of displaced water.

Volumetric composition – is characterized by three dimensions: length, width and height; such as tree-shrub groups and curtains that we examined.

Volutes – 1) an architectural decorative detail in the form of a helix with circles in the center. The volute is a part of capitals of the ionic, Corinthian, and composite orders. The architecture of the Renaissance, Baroque and classicism used the volutes of very large sizes as an ornament windows and doors structures; 2)an ornament in classical park parter in the form of a spiral curl, located in the corners or edges of flowerbeds.

W

Washed away soil – a soil type that is displaced or redeposited in the result of water erosion of the soil.

Water balance – the ratio between the amount of water coming and that is consumed from the soil for a certain period of time. It is expressed in mm water layer or in cubic meters per 1 hectare.

Water erosion – the destruction of the surface and lower horizons of soils under the action of streams of water flowing from the slopes as a result of intensive rains or snow melting. There are natural and accelerated types : planar and linear erosions in runoff water. Natural soil erosion is the process of loss and renewal of the top soil by the processes of soil formation and renewal. Planar erosion – is when the soil flushing occurs over the entire area. Linear – if on the surface of the soil wash–out is formed with the creation of a vertical wall (blast erosion), which is the initial phase of ravine formation. In Ukraine, the area of lands eroded by water is constantly increasing (80-100 thousand hectares annually) in the conditions of absence of complex anti-erosion measures in the catchment areas of various ranks and now there are about 12 million hectares.

Water park – the area with a high proportion of water area in the overall balance of park areas (more than 25% are the water reservoirs) designed for mass recreation of people (for physical culture and sports, cultural and educational activities, entertainment etc.)

Water parterre – was created very rarely in the form of water basins. These beautiful rectangular water mirrors, surrounded by sculptures, were built in Versailles. Up to the present one of the most beautiful water parterres preserves in the English Park of Blenheim.

Water protection area – a protected nature area of regulated economic activities, that is established along the rivers, seas and around lakes, water reservoirs, other water bodies to create a favourable mode of water objects, prevention of their pollution, contamination, protection of their biotic components and the regulation of flow fluctuations.

Water shoot – a branch developing from a sleeping bud on trunks or other perennial branches (oak, maple, pyramidal poplar etc.).

Water supply of an object– a set of measures directed at maintaining farm and irrigation water pipes with the aim of watering plants, roads irrigation, reservoirs filling and ensuring a variety of household needs.

Waterfall – a special hydrotechnical building in the form of a water stream that falls from a height of several meters; the obligatory condition for the shape of a waterfall is a large width relatively to the height of the stream that provides the desired aesthetic effect.

Watershed – a boundary on the earth's surface, separating the surface water runoff in two opposite directions. There are: the main – between adjacent river systems; lateral – between adjacent tributaries of the main river as well as surface and underground. Watershed of groundwater is an imaginary line that divides the flow of groundwater, moving in different directions.

Water-soil regime – is a combination of all phenomena that accompany the flow of water into the soil, its movement in the soil, changes in physical condition and costs.

Weathering – a combination of physical, physical-chemical and biological processes that alter the composition, condition and properties of rocks in the upper part of the earth's crust under the influence of the atmosphere, hydrosphere and biosphere, and anthropogenic activity.

Weeds – plants of local wild flora or imported, which have passed to arable lands and contaminate sowings of cultivated plants and other plant formations. Weeds have developed a number of features: simultaneous ripening with seeds of crops and weeds – satellites, the similarity in seed size, shape, weight and sometimes differentiated in time seed germination of one crop of weeds (wild turnip) with the intervals of 10-15 years. There are segetal weeds that infest crops and ruderal ones that dwell in the garbage. Weeds are divided into annuals (wild oat), biennuals (wild turnip) and perennials (thistle, couch grass) on the basis of their age.

Wilding – a young tree (seedling) taken from natural regeneration in the forest for planting forest plantations of different purpose.

Wind erosion – destruction of rocks and soil by wind. The destructive wind speed for different soils depends on their antideflation stability, which is determined by several factors, primarily by the mechanical structure and strength of adhesion of soil particles among themselves.

Wind rose – is a vector diagram of the distribution of winds in directions over a certain period (month, year etc.). There are a ray wind rose (vectors are highlighted by thickening) and circular one (the ends of the vector are joined by a broken line). The information about the wind rose can be used in planning settlements and individual buildings, the location of industrial objects, etc.

Windbreak – field and flow regulated forest belt, the main objective function of which is the reduction of wind speed on arable lands to an environmentally safe level and creation of a comfortable microclimate parameters for crops in the fields.

Winter garden – a specific set for planting the indoor garden of exotic plants, in which on a limited area and under the conditions of artificial microclimate plants in combination with elements of small architecture and using water and stone are placed . This is one of the most difficult types of interior gardening that requires knowledge of ornamental horticulture, engineering, art and architecture. The main purpose of a winter garden is to extend the person's being among the green plants, especially in unfavourable winter period.

Winter hardiness of plants, frost resistance – the ability of plants to withstand the unfavourable conditions of the winter period: a hard frost or a thaw with the formation of the ice cover, snowless or excessively deep snow, late snow melting in spring, water stagnation on soil surface, and etc. By resistance to low temperatures, plants are divided into thermophilic (plants grown in greenhouses), cold-resistant (usually exotic species which withstand a slight decrease in temperature to 5°C) and frost resistant (local species able to withstand considerable temperature reduction). The most winter resistant species are: pine (up to – 50°C): common oak (up to – 45°C); silver birch, Norway maple, small–leaved lime, blue spruce (up to – 40°C).

Wood fire – 1) herbaceous and shrub vegetation burning in order to squeeze out undesirable plants and destroy dead plants residues to improve grassland on pasture; 2) forest fires of anthropogenic or natural origin, sometimes intentional – for the transformation of forest land to pasture or arable lands; 3) a fire, a burnt wood.

Z

Zonal vegetation – a vegetation, typical for the corresponding territory, which forms an independent zone. Zonal vegetation is fully manifested in elevated, equal, water–allocation places, the climatic conditions of which mostly correspond to the given geographical zone.

Zoning – ordering spatially-related geosystems, similar to established criteria, into the individual territorial units of different ranks – regions. Each region is a link in the hierarchical system and is a part of the higher–ranking regions. Depending on the level of the hierarchy, different classification characteristics are chosen for zoning. If at one level the geosystems are united on a basis by tectonic unity, then on the other – by the similarity of the climatic or geobotanical characteristics, etc. In practice it is firstly accepted to pay attention to the morphological similarity of geosystems.

Zoological parks – research and cultural institutions, which acquaint the population with the animal world, promote the ideas of nature protection, carry out the experimental work in the field of animal biology, industrial stock–breeding, hybridization, domestication of animals etc.; this is an important reservation of wild animals, which preserves the wildlife species; zoos vary in size and types: from vivarium with one species of animals (aquarium, Dolphinarium, terrarium) to Safari Park with a diverse animal collection.

List of literary sources:

1. Горохов В. А., Лунц Л. Б. Парки мира. М., 1985. 328 с.
2. Зюилен Г. Все сады мира / Габриэл ван Зюилен: пер. с фр. М.: Астрель, 2003. 176 с.
3. Курбатов, В. Я. Всеобщая история ландшафтного искусства. Сады и парки мира / В. Я. Курбатов. М. : Эксмо, 2007. 736 с.
4. Ландшафтный дизайн. Словарь терминов. www.strotekh.ru/dictionary/landscape_design_dictionary.html
5. Мамчур Т.В., Тисячний О.П. Садово-паркові композиції / Практикум. Умань: УНУС, 2016. 90 с.
6. Маурер В.М. Декоративне розсадництво з основами насінництва. Навчальний посібник. К., 2006. 270 с.
7. Николаев, В. А. Ландшафтоведение : эстетика и дизайн : учеб. пособие для вузов / В. А. Николаев. М.: Аспект Пресс, 2003. 176 с.
8. Ожегов С. С. История ландшафтной архитектуры. М.: Архитектура, 2004. 232 с.
9. Роготченко А. П. Уманское чудо / А. П. Роготченко. К.: Будівельник, 1984., 96 с.
10. Садово-паркове господарство та фітомеліорації – Термінологічний словник-довідник / В. К. Пузік, Г. Б. Гладун, Т. О. Петрова, В. С. Кучерявий, Р. Б. Дудин, Т. М. Левусь; за ред. В. К. Пузіка. Х.: Планета-Прінт, 2016. 219 с.
11. Скакова А.Г. Ландшафтное проектирование сада. М.: Фитон+, 2010. 145 с.
12. Словарь терминов ландшафтного дизайна http:// landscapy.ru/slovar/
13. Теодоронский В.С. Степанов Б.В. Ландшафтная архитектура и садово-парковое строительство. Вертикальная планировка озеленяемых территорий. Учебное пособие. М.: МГУЛ. 1999. 99 с.

Content

N/O	Title	Pages
1	Preface………………………………………………………..	3
2	English Alphabet………………………………………………..	4
3	A…………………………………………………………....	5-19
4	B………………………………………………………..	19-29
5	C………………………………………………………..	29-38
6	D………………………………………………………..	38-44
7	E………………………………………………………..	44-52
8	F………………………………………………………..	52-62
9	G………………………………………………………..	62-69
10	H………………………………………………………..	70-75
11	I…………………………………………………………	75-77
12	J, K……………………………………………………..	78
13	L………………………………………………………..	78-85
14	M……………………………………………………….	85-91
15	N………………………………………………………..	91-95
16	O………………………………………………………..	96-99
17	P………………………………………………………….	99-114
18	Q, R…………………..………………………………….	114-124
19	S………………………………………………………..	124-138
20	T……………………………………………………….	138-145
21	U……………………………………………………….	145-146
22	V………………………………………………………..	146-150
23	W……………………………………………………….	150-152
24	Z………………………………………………………..	152
25	List of literary sources	153
26	Content	154

Навчально-наукове видання

Автори:

Гладун Григорій Борисович
Герман Людмила Володимирівна
Шастало Віра Олександрівна
Сидоренко Світлана Вікторівна
Гладун Юрій Григорович
Суска Анастасія Анатоліївна
Сайчук Олександр Васильович

Gardens, parks and landscape design: terms and definitions

Сади, парки, ландшафтний дизайн: терміни і визначення

Авторська редакція

Комп’ютерний набір і верстка С.В. Сидоренко, Ю.Г. Гладун

Підписано до друку 26.05.2018.
Формат 60х84/16.
Папір офсет. Ум. друк. арк. 9,07
Тираж 100. Зам. № 221

ТОВ «Пром-Арт»
61023, м. Харків, вул. Весніна, 12
Свідоцтво суб’єкта видавничої справи
серія: ДК № 5748 від 06.11.2017.
тел. (057) 717-28-80
www.promart.in.ua
E-mail: promart_order@ukr.net